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NOTES OF

A Lecture

ON

MEDICO-LEGAL RELATIONSHIPS OF GENERAL PARALYSIS OF THE INSANE.

Delivered at the Medical Graduates' College and Polyclinic, Chenies-street, London, W.C., on Jan. 25th, 1912,

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GENTLEMEN,—There is no doubt of the utility of bringing groups of conditions together and looking at them from a special standpoint, and I have to-day selected the medico-legal relationships of general paralysis of the insane.

INTRODUCTORY REMARKS.

General paralysis of the insane is one of the most interesting forms of brain disease associated with mental disorder. The disease is more or less definite in its course and in its fatal terminations, and it is pretty certain that syphilis is one of its most certain causes. Taking these facts into consideration, it is probably only a question of time before we discover some treatment which will arrest, if it does not cure it. If it is to be cured it must be detected early, and the medico-legal aspect brings one into relationship with many of the earlier cases and therefore is specially interesting.

General paralysis does not need here either a definition or a description, but I shall have to refer to several forms of the disorder and to different social dangers which may arise in these different forms or at different stages of the disease. First, there is the warning or prodromal stage, next there is the more acute stage, then the placid one which passes into the demented one. At each period there are particular dangers.

The greatest danger arises during the earlier stages, though in the weak-minded one there is risk of the patient becoming through his facility the tool of others. In the warning stage the chief characteristic is some loss of higher control so that the actions follow feeling rather than reason. They are often impulsive.

The result of defective control varies with the individual, and may either be represented by anger, violent language, and even brutal acts, by improper companionships and sexual faults of various kinds, or by marked acquisitiveness—the senseless taking of things for which there is no real want.

BRUTAL ASSAULTS.

First, then, a certain number of brutal assaults are made in the earlier stages of general paralysis of the insane. When we recognise the degrading tendency of the disease, with its inclination to seek for companions those belonging to a lower social order, it will be seen how the conditions leading to disorder of conduct are provided. Bad companions and drink, to which the general paralytic easily succumbs, may lead to violent personal attacks; and it is important to remember this, especially those of you who have anything to do with police cases, for I have known men who were general paralytics taken up for disorder of conduct, and when in the cells have been seen by medical men who have diagnosed drink from the alteration in speech which was really due to the disease, not to drink. In these cases there is no premeditation, and the attacks as a rule are impulsive and are not followed up. There is often regret at the actions and a wish to make amends.

SEXUAL RELATIONS AND OFFENCES.

General paralysis has always been looked upon as a disease in which the sexual functions play an important part. Formerly, sexual excess was considered the chief contributing cause, and now one recognises as an early symptom great development of desire, often with lack of power. In early general paralysis lust is almost always present, and may lead to what appears as a normal affection with offers of marriage. I regret to say I have seen such cases of marriage in haste and regret, on the wife's part, at leisure. The lust may be very great, and an insatiable longing which is very trying to the wife, or there may be, as in some cases with tabetic symptoms, desire which passes off very rapidly, leaving the man impotent. I have never had a case in which a plea for nullity of marriage under these conditions has been raised, but in several cases I should like it to have been brought to the test of the law courts.

Next, adultery is common among these patients, and in some cases I believe divorce has been obtained from a husband suffering from general paralysis whose disease was the cause of his immorality. The courts have so far never looked upon the plea of insanity as a very justifiable one in divorce cases. The general feeling seems to be that adultery is the one thing to be considered, and the contributing cause, insanity, is to be left out. The loss of higher control leads not only to adultery, but to the marriage of general paralytics with persons of immoral character. I have known several general paralytics who have married their mistresses or have married women of notoriously bad character. Besides this, general paralytics with general exaltation take it for granted that any woman will accept them. They, feeling so endowed with riches and honour, only have to seek to get, and under these conditions indecent suggestions or assaults may arise, the man believing that the woman was willing or even encouraging him. More common still in my experience has been indecent exposures. I think in some cases that general paralysis is a good plea for cases of indecent exposure. Indecent assaults on children are made by some men who have lost their higher control. In these cases there is, as a rule, a silly childishness about the acts; they are not brutally violent, but they are often done openly and without attempt at denial or evasion. In epilepsy there may also be fierce eroticism, but the acts are brutally carried out and there is honest denial due to complete loss of consciousness of the acts. The indecent cases of the general paralytic resemble in many ways those which not infrequently are seen in police reports in reference to old men, but in these last there is generally denial, but not of the honest type of the epileptic. It is evasive and easily controverted. In a few cases I have met with sexual perversion and unnatural offences in general paralytics. The patient is generally rather the victim or passive agent, being facile in immorality as in other things. To sum up on this matter, in any case of indecent exposure or assault perpetrated by a middle-aged man be on the look-out for the physical signs of general paralysis.

ACQUISITIVENESS.

As in so many other respects the general paralytic reverts of a simple uncontrolled nature, so it is in relation to property. The child takes what happens to be near him and what at the moment attracts his attention or something which appeals to his simpler desires or appetites. I remember several men who were admitted to Bethlem Hospital after they had been brought before the magistrates for petty thefts. Books from open bookstalls and sheets of music from similar places were the attractions. The attraction of jewellery was great also. The absolute value of things does not appeal so much to the patient as does his value of them. I have known a man take perfectly useless and valueless things for which at the moment he thought he had a distinct use, something which he felt was essential for some great scheme which he was starting. These petty thefts are most common in the earlier stage of the disease; later on the thefts may depend on quite another symptom of the disorder. How can you consider a man to be a thief if he feels that the whole world belongs to him, or that he is so rich that he can repay anyone for anything which he takes. It is thus I have known a man take valuable rings to give to the lady of his love. I have known general paralytics write cheques for large sums on banks at which they had no account. They would not forge a signature, but, fully believing they had money at the bank, would sign cheques. Very serious complications have arisen as the result of patients in the excited stage entering into big speculations, buying recklessly stocks and shares, ordering houses and furniture; as may be imagined, but yet hardly to be expected, I have known a man make a fortune in the earlier stage of this disease. At the time there was a boom—I think it was in nitrates; but any way he bought as freely as he could, and by the time he was in the asylum his speculations had proved a success.

CRIMINAL ACTS.

The criminal acts of general paralytics, as a rule, are not marked by any definite plan, uncontrolled impulse being the general cause, but though not common, yet occasionally general paralytics suffer from hallucinations and may have many of the symptoms of delusional insanity with ideas of persecution, and in such cases patients may be goaded to acts of violence.

CRIMINAL LUNATICS SUFFERING FROM GENERAL PARALYSIS

I have obtained some reports from the English and the Irish criminal lunatic asylums which are of interest, and I will give only the general results. I was surprised to see how rare it is to find criminal lunatics suffering from general paralysis. Dr. G. T. Ravington, of Dundrum, tells me that in 20 years he has only had 8 cases of the disease, and Dr. John Baker, of Broadmoor, says that in the 50 years since the opening of the asylum only 58 general paralytics have been admitted. In Dundrum 2 were accused of murder, 2 with sexual crime, the rest with crimes against property. Of the Broadmoor patients, 16 were convicted of murder or serious assaults, 5 were guilty of sexual faults, and 36 of offences against property, including arson, burglary, and the like. As I have already said, it is interesting to find so few criminal lunatic general paralytics. In part this is explained by some of those who have committed thefts being sent to ordinary asylums and never being sent to the State one.

INJURY AND GENERAL PARALYSIS.

Recently a very important practical point has arisen in relationship to the part that injury may play in the production of general paralysis. In questions of compensation for injuries leading to death and also in cases of life insurance it may be contended that injury alone would not have caused the disease. You will recognise that now the great majority of authorities look upon general paralysis and locomotor ataxy as almost certainly associated with, if not fully resulting from, syphilis. Yet I find even such an authority as Dr. F. W. Mott hesitating when asked if it is impossible for general paralysis to arise from accident alone. He, I think, agrees with my experience, which is, that in a very large majority of cases of general paralysis syphilis of long standing can be established, but that this disease alone is not the only factor. The question of heredity comes in, and the illuminating work of Mott inclines one to think that just as with alcoholic poisoning certain persons suffer in their brains while others do so in their general viscera, so with syphilis in some the stress of the disease falls upon the nerve centres, while in others it selects other parts such as the skin or the bones.

To return to the main point, though syphilis is most commonly associated with general paralysis, yet it requires other elements to start the disease. I believe that meat diet and alcohol are factors in many cases, and incidentally I may say that one superintendent of a large asylum told me that with general paralytics he hardly ever gave a meat diet, and as a result the acute phases and the epileptiform seizures had vanished from the asylum.

I have, as most of you must by now know, been in the habit of saying that syphilis seemed to ripen the brain for decay, and that any accident from within or from without might lead to the rottenness or decay. It therefore comes to this:—A man, who many years before had syphilis, was properly treated, and has been a healthy man, receives a blow on his head, which renders him insensible. He may recover from this, but within a few months some alteration is noticed in his conduct. If in one of the services, he gets into trouble by faults of irregularity or unpunctuality. He is irritable and forgetful; slowly the other signs of general paralysis appear and he is invalided. A claim is now made for disability depending on accident. Without the previous syphilis he would not have developed general paralysis, but without the accident he might never have developed it, or, at any rate, not for years. In my opinion, the man ought to be treated as if the accident were the efficient cause of disablement. In the same way in cases in which it is a question of life insurance, I presume a man who has had syphilis would have some addition made to his premium, but if he is following a life which is more than usually associated with risk of even slight accidents, such as being in the army or navy, I think a good deal ought to be added. I do not know of cases which have actually arisen in relationship to these points, but I know that they have arisen in cases in which pension questions had to be considered.

TESTAMENTARY CAPACITY: IMPROBABILITY OF A GENERAL PARALYTIC MAKING A SOUND WILL.

And now I come to a part of my subject—the testamentary capacity of a general paralytic—which has been of great interest to me, as I have on several occasions had to be cross-examined as to my experience and as to my opinion.

At first I fancy many of you would be inclined to say, "Of course, when once established that a man is a general paralytic then his capacity is gone." But you must remember that the law courts have supported wills which have been made in asylums even by patients at the time under the Court of Chancery. So that being of unsound mind does not necessarily prevent the making of a valid will. For testamentary capacity, as I have frequently said, there must be sufficient memory to recognise the property concerned and its relationships, also normal memory of blood relations, freedom from delusions affecting either the property or the relations, and sufficient will power to prevent undue influence.

The dangers in general paralysis are first on the emotional and unstable side, so that the so-called facility comes in, the last impression being followed. The patient will promise the last person whom he met all he possesses and more for no real consideration. The amorous tendency, too, easily leads to the giving largely to unworthy persons. The reckless extravagance depending on delusions of grandeur are very potent influences. The defective memory must also be considered. Here, then, we have commonly a person with defective memory, want of normal recognition of his relations and of his property, and therefore likely to go wrong. He is also very easily influenced. On the first aspect, then, of such cases one is justified in saying it is improbable that a general paralytic will make a good will, but even with all these symptoms he may almost automatically carry out in his will the feelings and judgments of his sane life. Therefore in each case the contents of the will will be found to influence a jury more than your opinion.

WILLS AND LUCID INTERVALS.

Next, it is of great importance to remember that there are in general paralysis frequently periods of complete sanity. I know many, who have not life-long experience of the insane, are inclined to doubt the restoration to sanity of anyone who has been out of his mind, but I know better, and in general paralysis I have seen, even in cases which ended fatally within a short time, perfect lucidity. I remember very well a case which was heard in London some years since in which a man who died of general paralysis made a will some time after he had been in an asylum. He was sent out of the asylum "relieved," and during a period of calm made a will which, though contested, was established. It is very important to remember that it is not in every case that these lucid intervals occur. As a rule the more acute and maniacal the onset the greater the probability of a remission. Though rare, more than one remission may occur, but as a rule I should doubt the capacity of a patient who had had more than one lucid interval. Again, these lucid intervals occur during the earlier stages of the disease, and though I am disinclined ever to be very dogmatic in reference to prognosis in cases of insanity, yet my opinion is that remissions are not to be expected in the second or placid stage of general paralysis, and are impossible in the last or demented stage. This, I think, is a very strong and important point, but one not easily established before a jury. Take such a case as this. I was asked to see a man whom I had once seen before I had diagnosed general paralysis. I found him lying on a mattress on the floor, muttering incoherently. It was impossible to get him to understand a word I said, and I failed to understand anything he said. I heard that he had been in this restless, dirty, and demented stage for some days. I heard that he survived a few weeks and then died. Some time later I was asked to give evidence as to his testamentary capacity at the time of my second visit. I said without hesitation that he was totally incapable of understanding the contents of a will or of duly executing it. Yet his cross was affixed to a document purporting to be his will. I was examined as to the nature of general paralysis, and I was asked if it was not true that in this disease there were lucid intervals. I admitted there were, but only at the earlier

stages. I was asked if I had not assisted in establishing the will of a general paralytic. I admitted this. When trying to explain the differences between the cases I was stopped, and the counsel made it appear that in cases—that is, all or any cases—of general paralysis there might be lucid intervals, and that it was not for a medical expert to say when and how these might occur; the fact was that such intervals did occur, and he maintained that the deceased had during such a period signed the will. The jury agreed with him.

In relationship, then, to testamentary capacity, the ordinary qualifications for capacity must be established, but it must be allowed that there may be periods of complete lucidity during which a proper will may be made. Here I may say that in criminal cases it may be set up by the prosecution that the crime, though perpetrated by a general paralytic, was still done during a period of sanity.

HEART-BLOCK AND NODAL RHYTHM IN THE ACUTE INFECTIONS.

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IT has been known for more than a century that acute rheumatism is peculiarly prone to affect the pericardium and the valves of the heart, and is, indeed, the most common cause of chronic valvular disease; but it is only within the last few years that its special action upon the cardiac muscle has been recognised, and even now our knowledge of its effects is by no means complete.

Acute rheumatism may produce gross lesions in the connective tissues. The occurrence of subcutaneous nodules was first described by Hillier[1] in 1863 in a case of chorea, and Meynet[2] (1875) and others subsequently recorded their association with acute rheumatism, but these early observers failed to aporeciate the full significance of their appearance. In 1881, however, Sir T. Barlow and Warner[3] pointed out the close connexion between the eruption of nodules and the occurrence of acute endocarditis, the presence of large nodules being an almost invariable sign of serious valvular disease, and indicative of a grave prognosis.

It had already been recognised that in certain fatal cases of rheumatic endocarditis the latter seemed insufficient to account for the fatal issue. In some instances pericarditis co-existed and doubtless aided in the progress towards death. But in others it was absent, and the chief clinical phenomenon was a progressive weakness and dilatation of the heart. To these cases Sturges[4] (1894) drew attention in his Lumleian lectures, maintaining that the rheumatic affection of the heart was not merely endocarditis or pericarditis, but *carditis*, all the tissues of the organ being involved in greater or in less degree. It was already known that fatty and granular changes were not infrequently present in the cardiac muscle cells in the acute infections, but it was only in 1899 that Poynton[5] demonstrated the essential rheumatic lesion in the cardiac muscle, the microscopic submiliary nodule, which, though usually smaller, is exactly comparable to the nodules which occur in the subcutaneous tissue.

Within the last few years many observers—Cowan[6] (1903), Geipel[7] (1905), Aschoff[8] (1906), Carey Coombs[9] (1907), and others—have extended the investigation, and have emphasised the importance and the frequency of myocardial lesions in the acute infections. The muscle cells in these diseases are generally abnormal to some extent if the illness has lasted for more than a few days, and submiliary nodules may occur,[10] though they are most common in cases where endocarditis co-exists.

Submiliary nodules are rarely of great size and are generally invisible on naked eye examination. The smaller nodules interfere but little with the adjacent muscle cells, but the latter are always abnormal if the nodule is large.

Microscopic examination shows that the essential lesion is a round-celled infiltration of the interstitial tissue. These infiltrations occur most frequently in the ventricular muscle, especially on the left side. They are usually situated around an arteriole or in its immediate vicinity, and sometimes involve the vessel wall, which may be so swollen that the lumen is almost obliterated. The cells may be few in number and the adjacent muscle apparently normal; but they may be numerous and infiltrate between the muscle cells, which are then more or less degenerate. In most cases the cells are arranged in discrete foci or nodules (Fig. 7), separated from each other by normal tissue; but in others the infiltration is diffuse (Figs. 8 and 9), and much larger areas are involved.

The cells are mainly mononuclear; the majority are evidently lymphocytes, but a few larger cells with a fair amount of protoplasm, which are probably of connective tissue origin, are often present, and occasionally a few polymorphonuclear leucocytes may be seen. In very malignant cases dense aggregations of polymorphonuclear leucocytes, with disintegrated muscle fibres, may be found; in other words, an acute suppurative myocarditis.

The rheumatic submiliary nodule is said to be characteristic (Carey Coombs[11]). The foci are chiefly composed of mononuclear cells superimposed upon a groundwork of fibrin, but also show certain very large cells which are often multinuclear. These may be globular or fusiform in shape, and their protoplasm takes up both acid and basic dyes, so that they appear much darker than the surrounding tissue. We have observed these cells in several cases in the cardiac tissue at the base of inflamed valves, but we have only once (Case 5) found them in interstitial nodules. The arteries, too, in these cases may be thrombosed (Romberg), most often in the vicinity of the auriculo-ventricular junction. We have found arterial thrombosis with arteritis and periarteritis in one case of acute myocarditis.

Cellular infiltrations are very commonly present in the tissues at the bases of inflamed valves, especially the mitral valve, a circumstance which is important on account of their proximity to the primitive tissue of the heart. Bacteria have not hitherto been found in the non-suppurative myocardial nodules, which thus seem to be the result of a local toxæmia. As regards their ultimate fate, the smaller nodules are probably completely absorbed, but it seems certain that the larger lesions may become the foundation of a subsequent fibrosis of the myocardium.

The cardiac muscle in cases of chronic valvular disease is frequently fibroid, patches of sclerosed connective tissue of varying size being scattered here and there throughout the wall. In the majority of cases the fibrosis is the result of arterial occlusion and consequent necrosis of the muscle cells. In mitral disease, however, other causes are often active, and the fibrosis of the tips of the musculi papillares is generally believed to be often the result of a spread of the inflammation from the valves to the papillæ, and not infrequently the connective tissue at the base of the valves is excessive in amount and infiltrates into the adjacent structures. It is evident, too, that some of the more distant fibrous tissue owns a similar origin, and is the result of the healing of the submiliary nodules which we have just described. The patches are peri-arterial in site, multiple and widespread, and individually are of little practical importance, but their multiplicity may interfere considerably with the cardiac action, and they may, accidentally, involve important structures.

It is now generally believed that the rhythm of the heart and the proper sequence of contraction of its various chambers are intimately associated with the integrity of the undifferentiated cells which are present in certain places, the sino-auricular node of Keith and Flack, the auriculo-ventricular node of Tawara, and the auriculo-ventricular bundle of Stanley Kent. It has been repeatedly shown that heart-block may be due to lesions in the auriculo-ventricular

[1] Medical Times and Gazette, 1863, vol. ii., p. 142.
[2] Lyon Médical, 1875, p. 495.
[3] Transactions of the International Medical Congress, 1881, vol. iv., p. 116.
[4] THE LANCET, 1894, vol. i., pp. 583, 653, 723.
[5] THE LANCET, 1899, vol. ii., p. 1163; Medico-Chirurgical Transactions, London, vol. lxxxii., p. 355.
[6] Journal of Pathology and Bacteriology, 1903, vol. ix., p. 87.
[7] Deutsches Archiv für Klinische Medizin, 1905, vol. lxxxv., p. 75.
[8] Brit. Med. Jour., 1906, vol. ii., p. 1103.
[9] Brit. Med. Jour., 1907, vol. ii., p. 1513; Quarterly Journal of Medicine, 1908, vol. ii., p. 26; THE LANCET, 1909, vol. i., p. 1377.
[10] Pneumonia, pleurisy, chorea, sepsis, leukæmia, small-pox, enteric fever, diphtheria, scarlatina, blackwater fever.
[11] Journal of Pathology and Bacteriology, 1911, vol. xv., p. 489.

bundle, though in certain cases this has been found to be normal, and the block has been ascribed to vagal lesions.

James Mackenzie[12] has suggested that extra-systoles occur as the result of impulses which arise in the primitive tissue. It has been shown that the normal contractions originate in the immediate vicinity of the sino-auricular node, and presumably in it, and that the region of the auriculo-ventricular tissue is more irritable than the muscle elsewhere, stimulation of the former being followed by a *series* of contractions (Gaskell), while stimulation of the latter only produces an isolated beat.

In chronic heart disease many lesions may be present in the heart—valvular defects, arterial disease, pericardial adhesions, myocardial fibrosis, &c.—and the lesions may be widespread. Variations in the cardiac rhythm are common events in these cases, but it is extremely difficult to disentangle the cause of the abnormal rhythm from the jumble of lesions which is found post mortem, and the maxim concerning *post* and *propter* must be kept in mind. Variations in the cardiac rhythm occur not infrequently in acute disease, and the cardiac lesions are generally more simple and less diffuse than those found in chronic affections; and the relations of cause and effect can, in consequence, be more accurately distinguished. During the last few years we have been engaged in the examination of the heart in such cases, and now report the results in five instances.

Heart-Block.

CASE 1.—The patient, a girl aged 10, was admitted into Ruchill Fever Hospital on Feb. 5th, 1910, suffering from diphtheria of five days' duration. Her previous health had not been good, but no details could be obtained. She had had attacks of measles, whooping-cough, and chicken-pox.

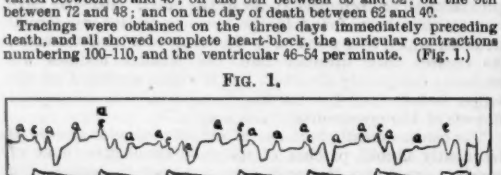
The girl's illness had commenced on Feb. 1st, the initial symptoms being headache, vomiting, and sore-throat. On admission she was found to be a poorly nourished and neglected child. The throat and pharynx were congested, the right tonsil was slightly ulcerated, and there was a considerable amount of loose membrane on the back of the throat. The toxæmia was severe, but the viscera seemed normal, and the urine did not contain albumin. Fever was slight, 99·2°F.

For the next two days the child's progress seemed satisfactory, and she was bright and cheery; but on the 9th she became dull and listless, and vomiting ensued; symptoms of palatal palsy made their appearance, and the heart dilated. On the 10th the vomiting persisted, and the child was restless and irritable. The weakness increased, and she died in the evening from cardiac failure.

The heart on admission seemed normal, but evidence of dilatation was manifest on Feb. 9th. There was widespread pulsation over the præcordium and very frequent and obvious pulsation in the neck above the clavicles. The first sound was somewhat short and muffled, and the second was occasionally reduplicated. No sounds corresponding to the auricular contractions could be heard. The pulse-rate during her residence was generally infrequent and varied greatly at different times. On admission it numbered 96; on the 6th 62; on the 7th it varied between 88 and 40; on the 8th between 80 and 52; on the 9th between 72 and 48; and on the day of death between 62 and 40.

Tracings were obtained on the three days immediately preceding death, and all showed complete heart-block, the auricular contractions numbering 100–110, and the ventricular 46–54 per minute. (Fig. 1.)

FIG. 1.



CASE 1.—Complete heart-block. Auricular rate about 110, ventricular rate about 46.

Necropsy.—The heart alone was examined post mortem. It was distinctly dilated and the muscle was rather pale. The cusps of the valves were healthy, but the auriculo-ventricular valves were slightly dilated.

Microscopic examination of the *a.-v.* node and bundle[13] showed that the node and the upper part of the bundle were involved in a well-marked acute inflammatory process (Figs. 7 and 8). The capillaries were notably congested and many cellular collections were present. The cells were chiefly mononuclear, and mainly lymphocytes, but a fair number of polymorphonuclear cells were also found. The bundle was diffusely infiltrated in many places, and its fibres distinctly separated from each other; and at one place about its middle considerably damaged by a larger nodule. The lower part of the bundle and its branches seemed normal.

The cardiac muscle generally showed evidence of interstitial inflammation, both focal and diffuse.

The vagus nerves were examined by Donnaggio's second method for early degenerative changes, but were found to be normal.

CASE 2.—The patient, a man aged 26 years, was admitted into hospital on June 5th, 1909, complaining of weakness and of breathlessness on exertion of some months' duration.

The patient's health had been good save for occasional "growing pains" and an attack of tonsillitis in boyhood, and gonorrhœa in the early part of 1903, until an attack of enteric fever later in the same ear, for which he was in hospital in Japan for about three months. He never regained his former health, and his feet were often swollen at night, but he was able to work until July 1908, when he was thrown out of employment by the failure of his firm. He stayed at home in fairly comfortable circumstances until he procured a new situation on Feb. 19th, 1909. In the early part of February he had caught cold and he was feeling "run down" when he commenced his new work. This entailed a daily walk of four miles, and he felt exhausted at night, and also during the day when walking uphill; but though he steadily became weaker he continued at his post until six weeks before admission, when he was compelled to go to bed. His cough, accompanied by a slight mucoid spit, persisted from February until May. He had frequent attacks of shivering at night after getting home; they were fairly severe, and lasted for 15 to 20 minutes, and he felt hot after he got into bed, and often sweated profusely in the early morning. About a fortnight before admission his right forearm and elbow became sore to the touch and on movement, and this continued for a few days. Four days before admission the left hip and ankle became painful, and this still persisted.

On admission the patient was found to be a thin, pale, badly nourished man, with flabby muscles and little subcutaneous fat. The left hip and ankle were painful and tender, and there was a small tender area of induration on the back of the left forearm. The right calf was, he said, painful, but nothing abnormal could be detected. There were several minute ecchymoses on the conjunctival surface of the right lower eyelid, and a fairly large one on the conjunctiva of the left bulb, while ophthalmoscopic examination revealed a medium-sized flame-shaped hæmorrhage on the course of the left superior temporal vein. The lungs were normal, the tongue was clean, and digestion good; the liver and spleen were slightly enlarged; the urine contained a small amount of albumin. The heart was but little enlarged, though there was a well-marked mitral systolic murmur. The pulse was frequent, regular, small, and soft; and he was slightly fevered at night.

Progress after admission was slowly but continuously in the wrong direction. Many embolisms occurred, chiefly in the limbs, but once, at any rate, in the spleen and twice in the kidneys. He had several "faint turns" of a few minutes' duration without obvious cause. The weakness increased, and after the middle of July œdema was more or less continually present in the legs. There were occasional rigors and generally profuse sweats at night. On August 25th a left hemiplegia occurred, and he died on August 29th.

The pulse during the patient's residence in hospital was always regular until immediately before death; and the venous curves were normal, save that the *a.-c.* interval was invariably prolonged, measuring about 0·25 sec. and never touching 0·2 sec. or 0·3 sec.

Necropsy.—Post-mortem examination revealed an acute endocarditis of the mitral valve. Two emboli were present in the right middle cerebral arteries, and septic infarctions were present in the left kidney and the spleen; from the latter the pneumococcus and B. coli communis were isolated in culture. Blood cultures during life had proved sterile.

The mitral valve was dilated. Numerous vegetations were present on the cusps, some small and wart-like, others long and luxuriant. The endocardium of the left auricle was thick and opaque, and a few minute granulations were present on the contra-fossal wall immediately above the valve; the endocardium at this point was notably thickened. There was no evidence of mural implication elsewhere.

Microscopic examination of the *a.-v.* node and bundle revealed well-marked congestion. The node was otherwise normal, though two small foci of round cells were found in the auricular muscle in its immediate vicinity. The bundle was involved in three separate places by foci of the same kind. The first was of small size and was situated immediately below the node; the second, which was considerably larger, was found a little lower down, between the auricular muscle and the bundle, and implicated both; the third, of fair size, occupied the central part of the bundle, and occurred immediately above the point where it passed through the central fibrous body. The cells were all mononuclear and chiefly lymphocytes. The fibres of the *a.-v.* bundle seemed normal, save in the immediate vicinity of the two larger foci, where they were evidently degenerate. The fibrous tissue of the bundle was not excessive in amount. The cardiac muscle generally showed evidence of interstitial myocarditis in an early stage, and the muscle fibres in some of the patches were degenerate.

The majority of the cases of heart-block which have been recorded have been associated with chronic lesions of the *a.-v.* bundle, the most common cause being fibrosis with or without calcification (Lewis[14]). In 1905, however, James Mackenzie[15] reported the transient occurrence of the milder grades of block in cases of acute rheumatism and influenza; and in 1908 several cases were reported in which full heart-block was found to be due to acute lesions. In one (Jellinek and Cooper[16]), where death resulted from acute gonorrhœal endocarditis, there was an acute necrosis of the interventricular septum; in a second case (James[17]), there were ulcerative endocarditis and an ulcer of the interventricular septum immediately beneath and posterior to the membranous septum; in a third (Gerhardt[18]) the patient suffered from rheumatic fever, followed quickly by enteric fever; inflammatory lesions were found in the *a.-v.* bundle. More recently Magnus Alsleben[19] has reported a case of diphtheria where full heart-block was due to a severe parenchymatous degeneration of the *a.-v.* bundle.

A partial or full heart-block is by no means of rare

[12] Diseases of the Heart, London, 1908.

[13] The *a.-v.* node and bundle in these cases were examined in serial sections, *every section* through which the *a.-v.* node and bundle passed being examined.

[14] The Mechanism of the Heart Beat, London, 1911.

[15] Brit. Med. Jour., 1905, vol. i.

[16] Ibid., 1908, vol. i., p. 796.

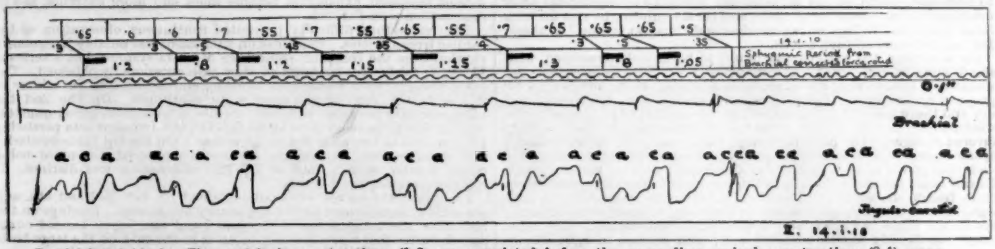
[17] American Journal of Medical Sciences, 1908, vol. cxxxvi., p. 469.

[18] Deutsches Archiv für Klinische Medizin, 1908, vol. xciii., p. 485.

[19] Zeitschrift für Klinische Medizin, 1910, vol. lxix., p. 82.

occurrence in acute disease. Rihl [20] has reported a case in which full heart-block seemed to have followed an attack of acute rheumatism. Griffith [21] has twice observed heart-block in gonococcic infections; Wenckebach [22] has seen it in influenza; Hay [23] has found it in diphtheria and in a gonococcic infection; and Magnus Alsleben [24] in pneumonia and enteric fever. Transient defects are not uncommon in acute rheumatic endocarditis, and we have now observed at least five

FIG. 2.



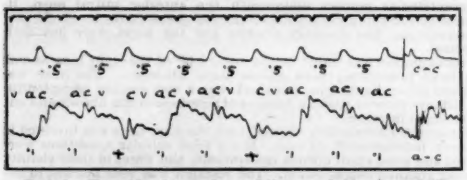
Partial heart block. The ventricular contractions (1-2) are completed before the succeeding auricular contractions (2-4) occur. Conduction is, however, so defective after the fourth auricular contraction that the third ventricular contraction is not completed before the fifth auricular contraction ensues.

examples. In one the defect persisted for nearly four weeks; in another it disappeared after six days, recurred three days later, and again lasted for six days. In none of these cases was there complete heart-block, but in one the ventricles only responded to every second auricular contraction. All the cases made good recoveries, and in one alone was the ultimate valvular lesion severe. We have observed three other cases in which a transient defect occurred. One was a case of enteric fever, another of diphtheria, the third of scarlatina. In none was there any evidence of endocarditis, and in all recovery was good.

Defects in conductivity can only be recognised by means of graphic methods, though they are, of course, suggested by extreme slowness or irregularity of the pulse. In one of our cases, however, the auscultatory phenomena were striking. A systolic murmur was audible at the apex. The ventricular contractions were infrequent and irregular, but occasionally two or three beats occurred in more rapid succession. With the isolated contractions the mitral murmur was long and loud, but when a series of frequent contractions obtained the murmur accompanying the second and third beats was much shorter and less distinct. The explanation was obvious on examination of the jugulo-carotid curves. (Fig. 2.) Conductivity was defective, but after the long pauses was sufficiently good to permit the completion of the ventricular contraction before the commencement of the succeeding auricular contraction; but, when the pause was short, became so defective and prolonged that the ventricular contraction coincided with the succeeding auricular contraction. The regurgitation into the auricle was in consequence minimal, and the murmur became shorter and less distinct.

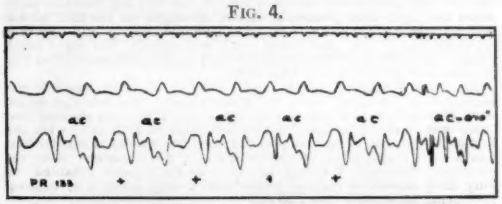
The causes of heart-block are numerous and not necessarily associated with lesions of the *a*-*v*. tissues, as it has been produced experimentally by the administration of various drugs (digitalis, aconitine, adrenalin, muscarin physostigmine), by the induction of asphyxia, and by vagus stimulation. It thus seems probable that nervous and toxic influences may produce heart-block in man without there being any lesion in the *a*.-*v*. tissues, but so far only one case has been recorded (Holst and Monrad-Krohn) with full post-mortem examination and graphic records in which the nervous origin seems definitely proved. In Case 1 of our series the presence of palatal palsy seems to point to a nervous origin of the block, but the post-mortem examination showed that the vagus nerves were normal. In our second diphtheritic case there was no evidence of any paralysis.

FIG. 3.



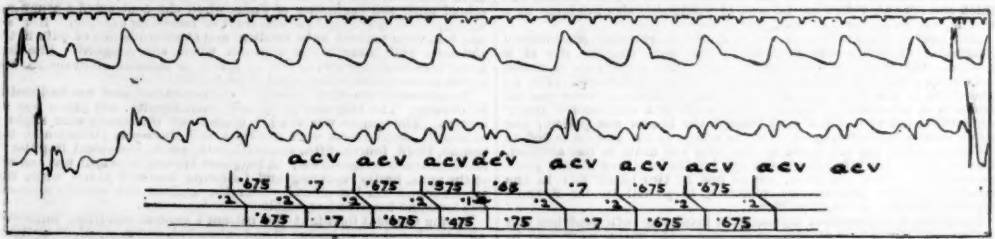
CASE 4.—The pulse is regular and the *a*.-*c*. interval regularly measures 0·19 sec. Respiratory movements deform the jugulo-carotid curve in places (+ +). T. = 0·2 sec.

FIG. 4.



CASE 5.—The pulse is regular and the *a*.-*c*. interval regularly measures 0·10 sec. Respiratory movements deform the jugulo-carotid curve in places (+ +). T. = 0·2 sec.

FIG. 5.



Nodal extra-systole. *s* and *c* are both premature and the *a*'-*c*' interval is short. The succeeding auricular contraction is also slightly premature.

Nodal Rhythm.

CASE 3.—The patient, a man, aged 24, was admitted into hospital on July 15th, 1909. His previous health had been good, save for attacks of measles and enteric fever in childhood; but he was often troubled with gumboils, and was frequently wetted at his work.

The patient's present illness dated from July 1st, when he had had

[20] Zeitschrift für Experimentelle Pathologie und Therapie, Berlin, 1905, vol. ii., p. 83.

[21] Personal communication.

[22] Arrhythmia of the Heart, Edinburgh, 1904.

[23] Personal communication: Brit. Med. Jour., 1910, vol. i., p. 20.

[24] Loc. cit.

one of his molars extracted on account of a gumboil from which he had suffered for a day or two. In the evening he felt sick and shivery, and probably was fevered. These symptoms continued, and on the afternoon of July 4th he had a definite rigor. On the 7th he felt better, and on the 8th he went to Ardrossan, walking from the station to the house at which he stayed (two miles). After this he improved until the 12th, though he had a slight cough after the 6th, with discomfort in the left chest. But on the 12th he had to go to bed as the pain in the side became worse and was much intensified on coughing. The left arm, too, was stiff, and he was very breathless and had to sit up in bed at night. On the evening of the 13th he was better, and able to sleep quietly lying down.

On July 14th the man felt so well that he dressed and went downstairs to breakfast, which he did without any difficulty or assistance; after breakfast he sat down on a chair, and on attempting to rise an hour later found that his legs were powerless and "had no feeling" in them. He had to be carried back to bed.

On admission the patient was found to be notably emaciated, with small muscles and scanty subcutaneous fat. His complexion was somewhat sallow and his expression anxious, while he had to be propped up in bed on account of breathlessness. The skin was hot and dry and there was a little œdema of the feet and slight pitting with the stethoscope on auscultation over the cardiac area. He was slightly fevered at night. The patient, though weak, was quite clear mentally, spoke correctly, and answered questions accurately and sharply. He had little power in his legs, but was able to pull up both knees, though he was unable to move the toes of the right foot. The movements were more free on the left side. There was considerable anæsthesia in both legs. Power was perhaps deficient to some slight extent in the left arm, but in the right was good; and sensation seemed normal. The right pupil was slightly smaller than the left; both reacted to light and on accommodation.

The tongue was dry and coated, many of the teeth were absent, and most of the remainder were carious, and the mouth generally was very foul. The pulse was soft, regular, and infrequent. Palpation of the apex beat, which was full and widespread, showed that every other beat was missed at the radial, the cardiac action being regularly coupled. A systolic murmur was audible all over the cardiac area. It was heard best at the apex, where it was long and soft, replacing and running out of the first sound; the second sound was not audible here. The respirations were difficult and cyclic, but without any full apnœa. A consolidation was found in the upper part of the right chest and in the left lower axilla friction sounds were audible. The urine contained a trace of albumin.

For a few days the patient's general condition improved slightly. The coupled rhythm ceased on the 16th, and he rested fairly well at night. On the 17th movement was more free in the left leg, but the palsy below the right knee persisted. About midnight on the 18th he was noticed to be restless and was found to be semi-conscious and unable to say more than "yes," and there was a well-marked full right hemiplegia. He gradually became weaker and more comatose, and he died with cardiac failure on July 27th, 1909.

The pulse remained "single" until the day of death, when it was noticed to be "coupled" again for a short time. The tracings, which were obtained in this case during the coupled rhythm showed that there was a slight increase of the *a.-c.* interval (0·25 sec.) with the first or larger beat of the couple, and that the second or smaller beat was a ventricular extra-systole which did not interfere with the auricular rhythm. Tracings of the "single" pulse obtained on July 23rd showed a regular pulse and a very short *a.-c.* interval measuring little more than 0·05 sec.

Necropsy.—Post-mortem examination revealed an acute ulcerative endocarditis of the mitral valve, engrafted on a lesion of older standing. The upper and middle lobes of the right lung were solid from a somewhat chronic pneumonia, and there were numerous infarcts in the spleen and kidneys. The left middle cerebral artery was occluded by a large pale embolus which resembled the vegetations on the mitral valve, and was associated with a very extensive softening. Streptococci were isolated on culture from the spleen. No blood cultures were made during life.

The mitral valve was stenosed, the cusps being notably shortened, the chordæ tendineæ short and thick, and the tips of the papillary muscles fibrous. There was well-marked evidence of fibrosis spreading upwards from the bases of the cusps in the direction of the central fibrous body of the heart. Enormous soft recent vegetations almost occluded the valve, and there were in addition extensive ulceration and perforation of the anterior mitral cusp. There was no evidence of any acute mural endocarditis; but the endocardium of the left auricle was thick and opaque, with a special area of thickening about as large as a shilling on the contra-fossal wall just above the valve.

Microscopic examination of the *a.-v.* tissues revealed considerable congestion of the tissues generally. The node was the site of a protound inflammatory disturbance, many focal collections of round cells being present, as well as, in places, a diffuse infiltration. (Fig. 9.) The fibres of the *a.-v.* node were probably normal, and there was no evidence of old-standing fibrosis. The walls of a microscopic artery were infiltrated with round cells, though the lumen was patent; the other vessels seemed normal. The intensity of the lesions varied at different levels, but the whole of the node was more or less affected. The bundle, on the other hand, was not implicated, save at one place immediately below the node, where one or two small foci in the auricular muscle immediately adjoining it passed in for a short distance between a few of its fibres.

There was a well-marked myocarditis, involving both ventricle and auricle, but it was only extreme at the base of the mitral valve, and in the auricular sections immediately above the node itself.

CASE 4.—The patient, a man, aged 42, was admitted to hospital on Jan. 31st, 1911, complaining of breathlessness and of swelling of the feet and legs of two or three months' duration.

He had always enjoyed good health prior to the onset of his present illness, save for pneumonia at the age of 30, and attacks of measles in childhood and at the age of 32. He had habitually used tobacco and alcohol to excess.

In the preceding April he had caught cold and had never been well since. The cough and spit persisted and he lost appetite and felt weak and unable to do his work. In July he noticed that his feet were sometimes swollen at night, and he began to be very breathless on exertion. In August the œdema became permanent and, steadily increasing in amount, soon compelled him to remain in bed. In December he one day suddenly felt severe pain in his right side and spat blood in considerable quantities for some weeks. He had to be propped up in bed on account of breathlessness, the spit and the œdema steadily increased in amount, and his general strength rapidly failed. In January he attempted a short walk, but fell down in a faint on the pavement.

On admission the patient was extremely ill. He sat bolt upright in bed, coughing continually and spitting up large quantities of watery mucoid material. Œdema was universal and very marked in the legs and scrotum. Detailed examination was impossible, but evidence was found of a consolidation of the middle lobe of the right lung and of pleurisy on the same side. The heart was enlarged and double aortic murmurs were audible down the sternum. Progress was continually in the wrong direction. The hæmoptysis recurred, the dyspnœa and œdema increased, exhaustion became more and more extreme, and he died suddenly on Feb. 5th.

The respiratory difficulty prevented continuous observation of the cardiac irregularities. The pulse on admission was notably irregular in rhythm from the frequent occurrence of extra-systoles, but a series of 20 or 30 fairly regular beats of slow rate occasionally obtained. The extra-systoles were sometimes isolated and sometimes in salvoes of 2, 3, or 4. On Feb. 1st the same state continued. On the 2nd the pulse was very irregular and very mobile, a bout of coughing quickening the rate from about 90 to about 120–130, the frequent rate persisting for a minute or two after the cough ceased. On the 3rd the irregularity was more marked, but on the 4th had disappeared, the pulse being quite regular with a rate of 110–120; alternation was distinct. It remained regular until death.

Jugulo-carotid curves were only obtained on Feb. 2nd and 4th, and are somewhat deformed by the respiratory movements. Tracings on the 2nd show the irregularity of the pulse, and the jugulo-carotid curve demonstrates that while the *a.-c.* interval in the case of the large beats is of normal length, it is much shorter with the extra-systoles, varying between 0·10 sec. and 0·15 sec. On the 4th, when the rhythm was regular but more frequent, the *a.-c.* interval is always short, and measures 0·10 sec. (Fig. 3). The tracings thus seem to show that on the 2nd extra-systoles were arising frequently in the vicinity of the node, the sinus rhythm, however, on the whole predominating; while on the 4th the pacemaker had changed, the sinus influence had been lost, and *every* contraction originated in the auriculo-ventricular node.

Necropsy.—On post-mortem examination the heart was found to be greatly enlarged, weighing 25½ ounces. The aortic valve was incompetent, the septal cusp having a fairly large perforation with well-defined margins a little below its free border. All the cusps showed some small recent warty vegetations, but were not thickened. The other valves were not affected, but the auriculo-ventricular valves were dilated. Two patches of superficial mural fibrosis were present in the left ventricle. One, which was small, was situated near the apex. The other, which measured about ½ in. in diameter, was situated on the interventricular septum underneath the anterior mitral cusp, its anterior border being fully ½ in. behind the posterior border of the pars membranacea. The coronary arteries and the aorta were but little abnormal.

A small abscess was found in the lower lobe of the right lung as well as a large infarction; both pleuræ were adherent. The liver was adherent to the diaphragm, and there was a well-marked perisplenitis. The kidneys showed slight evidences of arterio-sclerotic fibrosis and one or two small infarcts.

Microscopic examination showed that the *a.-v.* node was involved in an acute inflammatory process. Many focal cellular collections were present and some small diffuse infiltrations, the fibres in their vicinity showing granular degeneration. The reaction was best marked in the upper portion of the node and in the part which was nearest to the base of the mitral valve. The cells were chiefly mononuclear and mainly lymphocytes, with only an occasional polymorphonuclear leucocyte. The *a.-v.* bundle was not definitely affected, but was slightly implicated by a nodule in the cardiac muscle immediately beneath and posterior to it. The fibrous tissue around the bundle appeared excessive in amount and showed traces of calcification.

The cardiac muscle generally showed evidences of cloudy swelling and a few nodules, which were most numerous at the base of the mitral valve and in the auricular muscle just above the node.

CASE 5.—The patient, a girl, aged 10, was admitted to hospital on June 10th, 1911, complaining of shortness of breath and of swelling of the feet of a week's duration.

The girl had enjoyed good health, with the exception of three attacks of "measles," until about two months before admission, when she was noticed to be taking her food badly and to be losing flesh, and to be disinclined for her usual play. She continued, however, to go to school until the beginning of June, when she contracted a cough unaccompanied by spit and became short of breath on exertion. Her face and feet were noticed to be swollen, and she complained of pain in the abdomen and beneath the sternum when she coughed. She had sometimes to sit upright in bed at night on account of dyspnœa, and in the mornings she complained of headache.

On admission the child looked ill and exhausted, and was inclined to be drowsy. The face was pallid and looked puffy, but there was no œdema. The tongue was thickly coated and the tonsils were slightly enlarged. Both hearts were enlarged, and there was pulsation in the second, third, fourth, fifth, and sixth interspaces, the apical impulse in the fifth space being diffuse. A long soft blowing murmur was audible at the apex, partly replacing and following the first sound, while the second sound was "doubled." Over the xiphoid the systolic murmur was loud and harsh and resembled a friction sound.

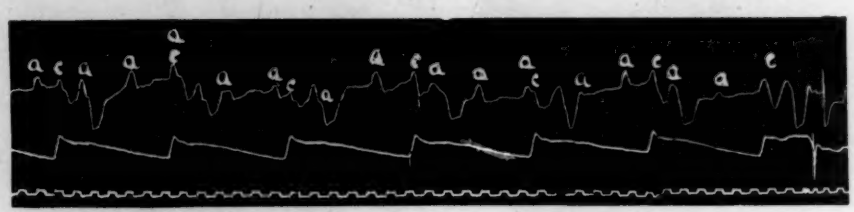
During the next fortnight the patient's general condition improved slightly, but she still looked ill and exhausted, and complained at times of substernal pain. An urticarial rash appeared upon the 24th and persisted for a few days. On the 29th pericardial friction was well marked and a small pleural effusion was discovered at the base of the left lung. In the beginning of July the symptoms became more serious, and she grew steadily weaker and sometimes sweated profusely at night. A crop of minute subcutaneous nodules developed on the backs of the hands and persisted for a few days. On the 14th vomiting set in and continued severely for the next three days. Exhaustion became more extreme, and she died on July 22nd.

The nature of the infection was obscure. There was no history of arthritis, and the joints were never swollen or painful during her residence, and the tonsils, though large, were not acutely inflamed. She was habitually slightly fevered at night, but the temperature only once rose above 101° F., and was more usually under 100°. The leucocyte count

varied between 8000 and 23,000. No other foci of infection were discovered, and the symptoms seemed to point to a rheumatic infection of the heart without arthritis.

The pulse on admission was regular, small, and extremely soft. At first the rate was 100-110, but it steadily increased, and for the last two weeks of her illness never ran below 120, though it only numbered 140 on two occasions. Tracings were obtained on several occasions and were regular and normal until July 3rd, when a ventricular extra-systole was recorded. During the succeeding days the pulse was often slightly irregular from extra-systoles, but no satisfactory curves were obtained until July 17th (Fig. 4). The respiratory movements were frequent and deformed (+) every alternate pulse beat, but *a.-c.-v.* are distinct in the intervening contractions, and the *a.-c.* interval regularly measures 0·10 sec. A tracing on July 22nd again shows a regular pulse with an *a.-c.* interval of the same length.

FIG. 6.



(Reproduced from *Heart*, a facsimile of the drum tracing shown in Fig. 1 on a small scale.)

Necropsy.—Post-mortem examination revealed a well-marked subacute pericarditis, the two layers of the pericardium being closely adherent to each other by fibrinous adhesions over the front of the heart, but only slightly over the posterior surface. The parietal pericardium was adherent in several places to the chest wall. The heart generally was enlarged. The mitral and tricuspid valves were both dilated and showed rows of recent pearly vegetations upon their auricular surfaces.

One or two caseous glands were found at the root of the right lung. Both pleuræ showed evidences of subacute pleurisy.

Microscopic examination showed a well-marked interstitial myocarditis. The nodules varied somewhat in their character. The majority were composed of mononuclear cells with a few polymorphonuclear leucocytes; others were of the "rheumatic" type, consisting chiefly of multinucleated giant cells with only an occasional lymphocyte; and a few were "mixed" with a few giant cells, many lymphocytes and an occasional polymorphonuclear leucocyte. The muscle cells in the vicinity were evidently degenerate.

The lesions were most extreme in the neighbourhood of the mitral and tricuspid valves. The *a.-v.* bundle was involved in a large focus which, occurring near the tricuspid valve, infiltrated the bundle for a short distance. The *a.-v.* node was notably affected; none of the infiltrating cells, however, were multinucleated. The capillaries were extremely congested, and the lymphatic vessels could be seen plugged with solid masses of lymphocytes. (Fig. 10.) The principal vein of the node showed an acute phlebitis and periphlebitis. (Fig. 11.) The majority of the cells in the wall of the vein were lymphocytes, but a considerable number of polymorphonuclear cells were also present, and at one place a group of giant cells. Around the vein the polymorphonuclear cells were almost as numerous as the lymphocytes, and infiltrated the auricular muscle immediately above it. The greater part of the phlebitis was above the node. Just before the vein left the node it was joined by a moderately large branch, and the vein above the junction was thrombosed, the thrombus consisting of a fibrinous matrix with numerous red cells and abundant polymorphonuclear leucocytes. (Fig. 12.) The thrombus was attached to the side of the vein, but did not completely occlude it, and could be traced through several sections.

In 1907 James Mackenzie[25] suggested that extra-systoles might arise in the *a.-v.* node (nodal extra-systoles). In certain extra-systoles the tracings show that the auricle contracts at a time when the ventricle is already in contraction and the auriculo-ventricular valves are shut. In the majority of these cases careful measurement demonstrates that the auricular rhythm is unchanged and that the coincident contraction of auricle and ventricle is due to a ventricular extra-systole occurring immediately before the regular sinus contraction of the auricle. In some cases, however, both the auricular and ventricular contractions are premature (Fig. 5), and, as in auricular extra-systoles, the prematurity of the contraction entails defective conduction, the extra-systole cannot originate in the auricle, and both auricle and ventricle must respond to a common stimulus arising between them. It seems probable that Mackenzie's theory should be slightly amplified.

The *a.-c.* interval in jugulo-carotid tracings measures in the normal individual about 0·20 sec., being slightly shorter if the pulse-rate is frequent. During the *a.-c.* interval five events occur: (1) the auricular systole which lasts for about 0·10 sec.; (2) the passage of the stimulus from auricle to ventricle; (3) the latent period of ventricular contraction; (4) the period of ventricular systole prior to the opening of the aortic cusps; (5) the transmission of the aortic wave to the carotid artery. The average period between the commencement of ventricular systole and the appearance of the carotid wave in the neck (4 and 5) is 0·066 sec. (0·03 sec.–0·11 sec.), while the commencement of auricular systole

FIG. 7.

Showing a focal inflammatory lesion in the *a.-v.* bundle. (From Case 1.) (N.B.—Figs. 7 to 12 are × 90.)

FIG. 8.

Showing a diffuse inflammatory infiltration in the *a.-v.* bundle. The fibres of the bundle are widely separated by cells infiltrating between them. (From Case 1.)

[25] Quarterly Journal of Medicine, 1907, vol. i., p. 131.

FIG. 9.

Showing diffuse inflammatory lesions in the *a.-v.* node. A small arteriole is seen cut obliquely and its walls are infiltrated with cells. (From Case 5.)

FIG. 10.

Showing a lymphatic vessel filled with a solid plug of lymphocytes, situated in the upper part of the *a.-v.* node. (From Case 5.)

FIG. 11.

Showing the principal vein of the *a.-v.* node. An inflammatory nodule is seen in the wall on one side, and in the other a diffuse infiltration extending into the auricular muscle. (Case 5.)

FIG. 12.

Showing the principal vein of the *a.-v.* node with its two tributaries. A thrombus is attached to the right side of the vein, but does not completely block it. It is situated just where the vein leaves the node.

practically coincides with the appearance of the *a* wave in the jugulo-carotid tracing. The presphygmic interval and the transmission time are invariably lengthened in premature systoles, and it thus seems probable that whenever the *a.-c.* interval in the jugulo-carotid curve measures less than 0·10 sec. the auricle and ventricle respond to a common stimulus which arises between them.

In Cases 3, 4, and 5 the *a.-c.* interval is short. In Case 3 it measures 0·06 sec.; in Case 4, 0·10 sec.; in Case 5, 0·10 sec. The rhythm of the heart in these cases is almost absolutely regular, and regular action of the heart probably denotes a common site of origin for all the contractions; so the conclusion is reached that the heart in these cases was responding to stimuli which arose regularly in an abnormal site, between the auricle and the ventricle (nodal rhythm). In Case 4 the earlier tracings make the conclusion even more certain, for they show that at one time extra-systoles were arising in the vicinity of the node, though the majority of the beats were in response to sinus stimuli.

We have been unable to find any tracings of a similar kind in the literature, with the exception of a case (Case 10) recorded by one of us in the *Quarterly Journal of Medicine*.[26] The pulse in this patient numbered 66–80, and the *a.-c.* interval invariably measured 0·10 sec. This patient made a fair recovery from his symptoms, which were chronic in character.

This conception of a nodal rhythm is confirmed, if not proved, by the series of electro-cardiographic curves which have been recorded by Lewis[27] in cases of paroxysmal tachycardia. In Fig. 26 a short paroxysm is shown. In the earlier part of the tracing the normal P.R.T. waves are well marked, the P.–R. interval being 0·14 sec. During the paroxysm the waves R. and T. are similar to those occurring during the normal rhythm, but the wave P. is *inverted*, which strongly suggests that the wave of contraction in the auricular muscle has travelled in a direction the reverse of the normal —i.e., from below upwards (Lewis); while the P.-R. interval is now only 0·08 sec. At the end of the tracing the normal rhythm is resumed.

Paroxysmal tachycardia not infrequently shows jugulo-carotid tracings similar to those which we have described in Cases 3, 4, and 5, but the pulse-rate is much more frequent, numbering in three curves which we have obtained, 160, 182, and 214. In all these cases auricular contractions regularly preceded the ventricular contractions by a period which did not exceed 0·10 sec. It is well known that the *a.-c.* interval varies to some extent in its duration even in the same individual, and is shorter when the heart is beating frequently than it is when the pulse-rate is slow, but in normal rhythms P. is never inverted.

The cases which we have reported cannot, however, be regarded as examples of paroxysmal tachycardia. In all three the sequence of events was similar, the tracings showing at first a normal rhythm interrupted by occasional extra-systoles, and preceding death a *regular* more frequent action with a short *a.-c.* interval. In no case was the tachycardia excessive or paroxysmal or the onset of the new rhythm abrupt. It seems probable that nodal rhythm is not so uncommon as it would appear to be from the scarcity of records, for an ante-mortem rise in the pulse-rate attracts little special attention, though an infrequent or an irregular pulse does not escape investigation.

The inception of heart-block or nodal rhythm may conceivably be the proximate cause of death, for the mechanical difficulty under which the heart labours in these rhythms must be very considerable, the synchronous contraction of auricles and ventricles throwing the auricular blood backwards into the veins, and lessening in considerable degree the ventricular content and output. The blood pressure in these cases is in consequence always low and the pulse is always small. The serious import of paroxysmal tachycardia is now thoroughly recognised, for the continuance of a paroxysm for more than a few hours is known to lead rapidly to dilatation of the heart, a result which will ensue the more readily in cases where the valves are acutely inflamed and the cardiac muscle degenerate and weak.

Summary.—In a case of diphtheria, with full heart-block, the *a.-v.* bundle and node were found to be involved in an acute inflammatory process, and similar lesions were present in the *a.-v.* bundle in a case of malignant endo-carditis in which conductivity was defective. In three cases of acute endocarditis, with nodal rhythm, the *a.-v.* node was acutely inflamed, the bundle being only and but slightly affected in one instance.

Glasgow.

[26] Cowan and Ritchie: Coupled Rhythms of the Heart, 1910, vol. iv., p. 55. Belski (Zeitschrift für Klinische Medizin, Berlin, 1909, vol. lxvii., p. 515) has reported several cases (acute rheumatism, scarlet fever, enteric fever) in which he considered that the heart was contracting in response to stimuli which originated in the *a.-v.* tissues. His tracings show a rhythmical appearance of nodal or ventricular extra-systoles, often in groups of 2, 3, or 4 (Belski).

[27] Heart, London, 1909–10, vol. i., p. 306.]

ON THE USE OF SALVARSAN IN THE TREATMENT OF SYPHILIS.

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SELDOM has a new remedy received such general attention as has Professor Ehrlich's salvarsan, and thus a *résumé* of my experience with this drug may be of interest. Thanks to my former chief, Mr. J. Ernest Lane, I have been able to apply this new therapy on the large clinical material of the London Lock Hospital since the beginning of August, 1910. Some of the cases have thus been under observation for more than a year. With few exceptions they were men who had acquired syphilis, and hence my remarks will be confined to the treatment of acquired syphilis by the new remedy. If I refrain from giving statistics it is because the plan of treatment gradually underwent changes which the evolution of the new therapy rendered necessary, and therefore the later cases were treated in a manner different from that employed for the earlier ones.

Technique.

I have always avoided the use of subcutaneous injections on theoretical grounds, and it is difficult to understand why they should have been used to a considerable extent. The object-lesson of the subcutaneous mercurial injections, the demonstration of Professor Orth at the meeting held in Koenigsberg (September, 1910), and the researches of Martius on the necrosing influence of salvarsan upon human tissues should have led everybody to discard this mode of administration, which is responsible for a good deal of the discredit cast upon the new remedy. I have seen abscesses due to this method in patients who had been injected in London, Aix-la-Chapelle, and South Africa. Some of these abscesses were discharging five, and even six, months after the "accident," despite incision. They are so tedious and troublesome that nothing short of complete excision—as if they were tumours—seems sufficient to cope with them. Therapeutically these cases were failures, little, if any, of the salvarsan having been absorbed. It is hardly necessary to mention that these patients were unwilling to have any further salvarsan treatment.

The intramuscular method was adopted exclusively in the earlier cases. The high dilutions employed at that time on the continent were avoided, as I could only see in them a factor favourable to the production of abscesses and of pain. My efforts to reduce the amount of fluid to be injected, and to obtain a clear solution, led me to the preparation of acid solutions of very small bulk (6 c.c. as a rule). This method, which is practically the same as Duhot's, whose work I was not conversant with at the time, appears to me to deserve preference over all other forms of intramuscular administration. Of other methods tried by me, the suspensions of Michaelis and of Wechselmann are notoriously unsatisfactory (Ehrlich, Rille, &c.), and the alkaline solutions tend to give excessive pain. Emulsions, of which I have tried self-made emulsions in olive oil, appeared to be the least painful, but also to be therapeutically inferior to the acid injections.

This form of salvarsan administration is the most effective of all, in my experience—a view which is now also endorsed by Ehrlich,[1] who so fervently pleaded for the intravenous method about a year ago.[2] I have not observed an abscess with these intramuscular injections, which should be given near Barthélemy's point. The pain is usually severe after these injections, and lameness, lasting frequently a fortnight,

[1] Münchener Medicinische Wochenschrift, 1911, No. 47.
[2] Ibid., No. 1.

was noted repeatedly. Attempts to alleviate the suffering by adding a local anæsthetic, such as cocaine, to the salvarsan mixture are perfectly futile, because the effect of the local anæsthetic has long worn off before the salvarsan pain has reached its height. The only efficient way of diminishing the pain produced is to give morphia, as has been the practice of Duhot.

It is this respect for the patient's comfort which compels one to prefer the intravenous method. Theoretically this procedure appears to be the most suitable one for a *therapia sterilisans magna* in the meaning of Ehrlich, and thus it was taken up with zeal, despite its greater technical difficulties. It is nowadays the routine, and there is little probability that it will lose its favour. For the introduction of the drug into the blood stream either gravity or pressure is resorted to. Thus one either requires a simple infusion apparatus, as used from the beginning by Weintraud, or a suitable syringe, as indicated by Ehrlich and Schreiber. All the more or less complicated devices now on the market, with their additional taps, bellows, receptacles, &c., are more apt to hamper than to facilitate the operation. Personally, I have no hesitation in giving the infusion apparatus the preference. The only difficult point about the whole intervention is the introduction of the needle into the vein, and even the most skilful will meet with cases where he is compelled to make more than one attempt or even to expose the vein before he succeeds in introducing the needle correctly, of which success the following signs are the most important: (1) absence of pain or swelling when one allows the liquid to flow; (2) a wave-like sensation along the vein in a centripetal direction. This latter sign is absolutely characteristic of the correctness of the manipulation. If one uses the gravity method and allows saline only or water to flow in the beginning it is impossible to injure the patient's arm with these precautions. Attempts to ascertain the correctness of the position of the needle by moving it about after it has entered the vein or by allowing the blood to run back into a special "window" inserted in the tubing are to be condemned. In the former case one tends to injure and to perforate the vein wall, and in the latter case one favours coagulation and thrombosis.

With regard to the solution great care should be taken that it be perfectly clear and free from undissolved particles. This is of much greater importance than is the use of saline or of distilled water. Those who aim at accuracy should avoid both; the former is hypertonic, the latter hypotonic. In order to obtain isotony one should use 0·6 per cent. saline solution, as has been shown by Marschalko and others.

The question of neutralisation deserves some attention, because markedly alkaline solutions favour thrombosis, as was first pointed out by Darier and Cottenot,[3] and because the acid solutions which enjoy the support of Duhot and of Spiethoff[4] tend to produce an intense general reaction, as I have been able to observe repeatedly. It is on the whole best to neutralise carefully. Any error should be on the acid side.

The general reaction following upon an intravenous injection comes on rapidly, and in nearly all cases passes off in less than 24 hours. Sometimes the disturbances are insignificant; occasionally they are alarming. They have always been a sore point, and it is edifying to note the various explanations given. Thus Heubner[5] holds the sodium-ion of the saline responsible for the rise of temperature, whilst Stopford-Taylor and Mackenna[6] find the reaction proportionate to the acuteness of the disease. This latter view, which is shared by many, implies the liberation of toxins owing to the destruction of the spirochætæ, and attributes to them all the bad effects observed. Last summer Wechselmann[7] announced that he was able to avoid nearly all ill-effects by the use of re-distilled distilled water, thus holding the dead bacteria in the commercial distilled water responsible. Of late, even the "neuro-recidive" have been put down to this "water error"—a rather surprising suggestion, as one is supposed to hold this to be of a syphilitic nature. For practical purposes it is well to carry out all possible precautions, such as starvation previous to the injection, and the use of re-distilled water. One should, however, not forget that with all possible care one only succeeds in avoiding *nearly* all bad effects.

From my point of view, the systematic disturbances are merely the reaction against the sudden introduction of an arsenical compound; that bacterial toxins may change a portion of the drug into a more toxic form of arsenic, and thus increase the intensity of the reaction, is not improbable.

The most important immediate drawbacks of the intravenous method are collapse and thrombosis. The former occurred in two of the cases injected by me. Both patients had throat lesions, and complained of a choking sensation during the injection, collapsing at the end. Both were soon restored by hypodermic injections of ether. Thrombosis can be limited by rigorous asepsis, care in the making up of the solution, &c. But it seems to be impossible to exclude it completely, as it depends upon factors beyond our control to a certain extent. Fortunately, however, it is not common and seldom of gravity when it occurs. In serious cases the entire venous channel above the puncture may become thrombosed up to the heart; and death from pulmonary embolism has been observed.

To resume: the ill-effects of the intravenous method are in the vast majority of cases unlikely to have any serious effect upon the patients. The short duration of the reaction and the absence of pain are its great advantages. Where the circulation is impaired I would advocate the use of the intramuscular method if the administration of salvarsan is deemed imperative.

Dosage.

The question of dosage is still one of the most obscure problems of the new therapy, and it will certainly require many further studies before any definite rules can be laid down. At the present time there is no unanimity on this point. Everybody who has had sufficient experience with salvarsan has had to record recurrences and accidents, and has thus been led to alter his original mode of procedure. Tentative trials to improve the results have been made by increasing the number of injections, by altering the dose per injection, and by combining salvarsan with other forms of treatment, chiefly with mercury. Thus, some claim to be able to effect a complete cure by means of two intravenous injections, whilst others require three for the same purpose. Some repeat their injections after a few days' interval, fearing the production of arseno-resistant spirochætæ; whilst others allow weeks to elapse in the hope that all the arsenic will have been eliminated by the time they administer the next injection. Iversen's example of giving an intravenous injection, followed a few days later by an intramuscular one, has found imitators who thus initiate their patients into all the unpleasant effects which salvarsan is capable of, without being able to give them an adequate compensation. Krohmeyer recommends his "chronic salvarsan treatment of syphilis" for which he uses doses of 0·1 gramme, to be repeated every three days or so, until 18 injections have been given.[8] Others favour a combination treatment of salvarsan and mercury. Personally, I started with 0·4 gramme for intragluteal injections, and gradually increased the dose up to 0·8 without being able to note better results. For intravenous injections I have used 0·4 and 0·5 in the majority of cases. Some patients received two or more injections, sometimes within short intervals, sometimes after four weeks or more. Others, again, were given mercury as well—a procedure which I consider infinitely superior to pure salvarsan treatment. I am not impressed with the necessity of large doses, because they are not capable of producing better results than medium ones. This has also been the experience of other large cliniques, such as those of Professor Rille in Leipsic, and of Professor Klingmueller in Kiel. The danger of arsenicism, on the other hand, becomes greater with the large doses, and this should not be lost sight of, despite the relatively low toxicity of the drug. To my mind the views of Milian deserve careful consideration. This author holds that 0·3-0·4 gramme is sufficient, and advises to repeat the injections frequently; examination of the individual susceptibility to arsenic is also recommended by him, and can be carried out by a subcutaneous injection of an arsenical compound. My own experience has shown me that this tolerance is rather variable; thus, I have met with violent reactions in cases where I did not expect them.

[3] Semaine Médicale, 1911, No. 14.
[4] Münchener Medicinische Wochenschrift, 1911, No. 32.
[5] Ibid., No. 46.
[6] THE LANCET, May 27th, 1911, p. 1412.
[7] Münchener Medicinische Wochenschrift, 1911, No. 28.
[8] Deutsche Medicinische Wochenschrift, 1911 No 34.

whilst some patients about whom I was somewhat anxious have reacted very slightly.

The general condition, the nature of the lesions, and the susceptibility to arsenic should be, in my opinion, the chief guides as to dosage and general plan of treatment. The proposal to regulate the dose according to the body weight has nothing in its favour except its simplicity.

Organotropism.

It is unnecessary to dwell upon the spirochætocidal effect of salvarsan which has been so carefully studied experimentally, and which is incontestable. Equally important, however, is its organotropism which was so much dreaded in the beginning, and not without reason, after the experiences with atoxyl and its substitutes. Fortunately, these fears have not been justified; as a matter of fact, salvarsan has shown itself to present this great advantage over all other arsenical compounds—that it combines an unrivalled therapeutic activity with a remarkably small toxicity. But this does by no means imply that the organotropic properties of arsenic are wanting. Like other arsenical bodies it is eliminated slowly. Thus it has been found eight months after intramuscular injections, and even in intravenous cases, which begin to eliminate the drug almost immediately, after four months. The chief storage seems to take place in the liver.

The effect upon the nutrition in general is that of a stimulant and tonic. Thus, many of our cases declared themselves to be stronger, and an increase in weight, often considerable, was usually noted. The blood is also influenced favourably; at first it undergoes a certain diminution of the red corpuscles, and this is not surprising when one considers the fragility of these cells in certain stages of the disease (Gaucher), but later a marked increase takes place (as much as from 1,000,000 to 2,000,000 per c.mm., Bezais, Klausner). Further proof of increased cell activity is the behaviour of mucous surfaces; thus, non-syphilitic lesions of mucous passages frequently heal under the influence of salvarsan.[9]

The cutaneous effects consist in drug rashes which are mostly erythematous or urticarial in character. Herpes zoster occurred in one case I had injected. Amongst the secretory troubles, œdema of the face, especially of the lips, was noted in several cases. It comes on rapidly and passes off after a short time. Instructive from this point of view is an observation by Fisichella.[10] A woman whom he had treated with salvarsan developed erythematous patches. Later she was treated by another medical man with Fowler's solution, and an identical rash supervened.

The effect upon the alimentary canal shows itself in intense thirst, vomiting, and diarrhœa. Experimentally, this has been studied by Aladow.[11] For practical purposes these troubles are an argument against large doses. The vomiting and the diarrhœa which large doses tend to produce, lead to a speedy elimination of a portion of the drug, and thus the effective dose may become a small one which could have been administered with less discomfort.

As respiratory and circulatory responses we find oppression, dyspnœa, irregularity and smallness of pulse, cyanosis, peripheral algidity, and collapse. With regard to the urinary tract, transient albuminuria, anuria, and even acute nephritis (Gaucher, Weiler), have been observed. One of the cases at Dean-street developed an intense jaundice, which terminated fatally.

The ill-effects are absolutely analogous to those observed in poisoning with other arsenical compounds, and it requires a good deal of blind infatuation not to see this. How uneasy the enthusiasts are about these bad effects is evident by their "explanations," which are replaced by new ones every few months, and are becoming so hypothetical that even such warm supporters of the remedy as Milian are unable to accept them.[12]

In practice, the organotropic properties described above are of less importance, because most syphilitics are sufficiently vigorous to cope with them. More serious is the effect upon the nervous system, which may be differentiated into a meningotropism and a neurotropism (Sicard). In its mild form this action upon the nervous system shows itself in the form of headaches, vertigo, and buzzing in the ears.[13] These symptoms, Sicard's "neurotropisme d'alarme," are a warning not to submit the patient to another injection, or to reduce at any rate the dose, if one wishes to persevere.

Meningotropism in its graver form is characterised by epileptiform convulsions, which are followed by coma, and even death. It has now been observed by a considerable number of clinicians, such as Gilbert, whose case recovered, Almquist, Kannegiesser, Fischer, Oltramare, Caraven, Gaucher, and others. They are inexplicable except as cases of acute arsenical poisoning. Post mortem, the condition of the brain and of the pia mater is diagnosed as acute hemorrhagic encephalitis.

The neurotropism shows itself most frequently in palsies of the seventh and eighth cranial nerves, as was first pointed out by Finger. This predilection of salvarsan is as obscure as that of atoxyl for the optic, or of lead for the musculospiral. In the opinion of Ehrlich and of his followers these paralyses are of a syphilitic origin, and supervene in cases which have been incompletely sterilised, whilst Finger regards them as purely toxic. They are by no means rare and do not require special local conditions for their production. They have been observed not only in Vienna but everywhere where salvarsan has been used extensively. They, however, often escape notice, and those who are satisfied with injecting patients and then lose sight of them do not come across them. Moreover, the patients usually consult somebody else after the disaster. I have personal knowledge of two cases which are typical in their way.

CASE 1.—A man suffering from a chancre and a macular rash received an injection of salvarsan at the London Lock Hospital. Eight days later his symptoms had completely disappeared. Believing himself cured, he underwent no further treatment. Nine weeks after the injection, suddenly deafness and facial paralysis supervened. He now sought treatment at a general hospital. As his history pointed to syphilis, a course of inunctions was instituted, with the result that the nerve lesions disappeared.

CASE 2.—A man whose syphilis had been latent for years, and who had been properly treated, was advised to undergo salvarsan treatment with the view of completely eradicating the disease. He is now suffering from facial paralysis which so far has not yielded to the various measures tried.

The former case corresponds well with the views of Ehrlich, but the latter can hardly be understood unless one admits a toxic influence of the drug upon the nerve. I believe with Rille, Delbanco, Meirowsky, and others, that both causes are at work in most cases. Primarily, the nerve is irritated and injured by the salvarsan; the syphilitic process which is so fond of locating itself upon trauma may then supervene, either immediately if there are spirochætæ in the neighbourhood, or at a later period if they have to migrate from distant foci. Thus the four groups of paralyses observed find their explanation. 1. Slight transient palsies which require no treatment. 2. Immediate paralysis curable by antisyphilitic treatment. 3. Irremediable gradual paralysis. 4. Late syphilitic palsy, amenable to antisyphilitic medication. The amount of damage done and its reparability is merely a question of degree, and depends upon the intensity of the lesion produced by the salvarsan.

Recurrences.

The recurrences after treatment with salvarsan are peculiar inasmuch as they do not correspond to the lesions which the stage of the disease would lead one to expect. In the cases treated at the London Lock Hospital they were mostly of an ulcerative character, and usually single. Thus, a man would return with a recrudescence at the site of the chancre, or with a deep ulcer in one of his tonsils, &c. These lesions, which were sometimes rather tenacious, had almost invariably the character of late, chiefly tertiary lesions (rupia, gummata, &c.). Local recurrences were the rule, but lesions in fresh places were also noted. Especially the lower limbs seem to be a situation favoured by these fresh lesions. On the whole, salvarsan tends to precipitate the course of the disease, a phenomenon which is also observable after the use of the strongest mercurial preparations, although perhaps to a lesser degree. I think one is justified in regarding this as evidence that a high degree of sterilisation has taken place. Whether this anticipation of later stages could hasten the appearance of tabes and general paralysis is impossible to say at present. It does not seem probable, however, if one admits that special factors are at work in the production of parasyphilis.

Effects upon Syphilitic Lesions.

Amongst the cases treated at the Lock Hospital with salvarsan there were a few refractory ones, but in the

[9] Semaine Médicale, 1911, No. 10.
[10] Riforma Medica, May 22nd, 1911.
[11] Münchener Medicinische Wochenschrift, 1911, No. 48.
[12] Milian, Nov. 24th, 1911, at the Société Médicale des Hôpitaux.
[13] Sicard, Société Médicale des Hôpitaux, Oct. 27th, 1911.

majority the great symptomatic effect of the new drug was evident. Therapeutic marvels, such as regeneration of bone or disappearance of parasyphilitic lesions, were not observed. In early primary cases (chancre only and negative Wassermann's reaction) the results were excellent. Considering the possibility of aborting the disease at this stage, immediate active treatment is indicated. The past has shown that by excision of the chancre and immediate vigorous mercurial treatment (Erich Hofmann, Bering, and others) an eradication of the disease is possible. In the case of salvarsan even one injection may suffice. It is therefore to be recommended at this stage. Should the attempt fail, a mitigation of the infection is almost certain. In later cases the results are less favourable. There is little hope of eradicating the disease rapidly, and the chancre often heals slowly or recurs. Where the chancre is at all extensive energetic general and local mercurial treatment produces a better result, as I have been able to observe repeatedly. In these cases I combine salvarsan with local and general mercurial treatment.

This form of therapy also seems to be the best for florid secondary syphilis. Whilst lesions of mucous surfaces (condylomata, plaques, &c.) yield rapidly to salvarsan as a rule, the cutaneous manifestations disappear slowly. This is especially the case with papules, which do better under mercurial injections. Moreover, I have gained the impression that salvarsan favours pigmentation in this type of lesion. Under combined treatment splendid results are obtainable; it would seem that the arsenic favoured the action of the mercury. One should also bear in mind that the nerve-lesions occur chiefly in cases belonging to this stage of the malady. It seems, therefore, rational to give mercury the preference in these cases.

The favourable results obtained by many in tertiary syphilis are corroborated by my observations. In this particular stage salvarsan is especially useful. Two groups of cases may be distinguished. To the former belong those whose illness has been mild and who have neglected their treatment. Only when definite lesions trouble them these opportunists seek advice, and any antisyphilitic medication is usually sufficient to remove their worry. Salvarsan, however, not only removes their lesions with greater rapidity, but also prolongs the period of subsequent latency to an extent which is not achievable by other means.

The second group—which corresponds to the malignant cases described by some—comprises those who have been treated fairly regularly, but who, nevertheless, have undergone a thorough syphilisation. Many of them are constantly threatened with fresh outbreaks, and even the most active ordinary therapy can hardly keep their disease in check. Lesions supervene regularly upon the slightest interruption of treatment, or even whilst treatment is being followed. For these cases salvarsan is a true relief: the ulcers heal, the general health improves, and the constant anxiety is removed. These grave cases are, however, very prone to relapse, and the recurrences after salvarsan tend to be more extensive and more refractory than the previous lesions, and thus I have found combined treatment most useful for them. Such therapy should be continued for a considerable time.

Firm scars, advanced infiltrative lesions of long standing, lesions which are no longer syphilitic in a strict sense, show practically no improvement; keloids were, however, favourably influenced in one case. In tertiary lingual lesions the results obtained corresponded with those which we observe after calomel injections. Most cases showed improvement, but in cases where the former injections had failed, salvarsan was equally ineffective.

Since the introduction of Wassermann's reaction late latent syphilis has received great attention. Formerly the history of the illness and the nature of the treatment were the indications, or contra-indications, for further therapeutic measures. Nowadays great importance is attached to the result of the serological test, and many regard a positive reaction as an absolute indication for further treatment. Not only is the correctness of this procedure questionable theoretically, but it is also disappointing in practice. The older the syphilis, the more difficult it becomes to influence the reaction permanently, and salvarsan shows no special superiority in this respect.

The meaning of the term "malignant syphilis" varies with different authors, and this is chiefly the reason why so many cases labeled "malignant" have been recorded since the introduction of salvarsan, and why such favourable results have been reported. Patients who progressed but little under the treatment employed, patients who showed many recurrences, patients with lesions at vital spots, &c., all figure in these reports as malignant. As these cases are examples of ordinary syphilis in which the infection is unusually severe, they are best classed in the stages to which they belong. I reserve the term "malignant syphilis" here for that peculiar form of the disease which was first described by Bazin, and which is frequently termed "syphilis maligne précoce" nowadays. Its course is atypical: the chancre is deeply ulcerative, and leads to considerable destruction of tissue (loss of glans, of entire penis, &c.; secondary manifestations are absent; within a few months cachexia and lesions of the gravest character supervene, such as perforation of palate, deep ulcerations of the skin, gummata in the viscera. This truly malignant syphilis is rare nowadays in Europe. I have been able to observe a few cases of this nature. Two of them were treated with salvarsan, and both patients died, the only deaths recorded at the London Lock Hospital during a year. The former survived his injection by nine weeks; his lesions showed no improvement whatsoever, but progressed, and fresh ones developed. The second one succumbed to an acute arsenical intoxication, and is of special interest. In August, 1909, a chancre was acquired, and subsequently was treated at a general hospital, during which period no secondary symptoms were observed. At the end of October the patient came to the hospital cachectic, covered with extensive and deep ulcers on both legs, and suffering from severe ulceration of his throat. After nine months his lesions had not quite healed, but he was much improved, and had gained a stone in weight. A course of calomel injections during July and August, 1910, removed all remaining symptoms. In September he was well and was lost sight of till February, 1911. He then returned extremely ill, barely able to speak, with terrible ulcerations about the lips and cheeks. He was given an intravenous injection of salvarsan (0·5 gramme). The reaction was intense. Two days later jaundice supervened, which became more pronounced daily. After a week death took place. A post-mortem examination was, unfortunately, not granted.

If I have in the above account paid considerable attention to the ill-effects of salvarsan it is because their appreciation is essential for the building-up of a rational therapy and not because I wish to belittle the value of this remedy. Syphilis is usually a mild disease with an exceedingly low mortality [14] and the mercurial treatment has proved itself to be efficacious and safe for many generations. It is therefore inadmissible to expose the patients to greater risks unless one can promise them an adequate compensation. A rapid cure would be the most valuable gain, and it is to be regretted that disappointment should exist in this respect. Ehrlich already recommends to extend the period of observation to a year or two years,[15] and it is not impossible that the future will impose a further extension. Broquin (Gaucher, Académie de Médecine, Nov. 21st, 1911) and others have observed cases which have spread the disease after having been "cured" by means of salvarsan, not only in their own belief, but also in the opinion of their medical advisers.

It therefore cannot be of general interest to use this new remedy exclusively. The problem of applying the various antisyphilitic drugs to the best advantage of the patients finds its solution in a combined salvarsan and mercury treatment, as advocated by Neisser, and carried out by many at present. Its superiority has been established by the experiences of large cliniques, and by serological researches (Borelli and Messineo, and others). Of course, salvarsan must have a large share in the treatment, and under certain conditions becomes the remedy of selection.

The following maxims I have found useful in planning out a treatment: 1. Salvarsan is of special value where rapidity of action or concentration of treatment is desirable—e.g., for the removal of certain infective lesions, for patients whose conditions of life render a regular treatment impossible.

[14] The statistics of the United States Census Bureau for the Registration Area with 51,000,000 inhabitants (56 per cent. of the total population) show 2999 deaths due to venereal disease, and of these 1582 are hereditary syphilitic infants under one year. There have thus been less than 1417 deaths due to acquired syphilis, whilst tuberculosis carried off 81,720, cancer 37,562, and pneumonia 70,033 persons during the same period.

[15] Münchener Medicinische Wochenschrift, 1911, No. 47.

2. It is widely applicable, as its toxicity is small. Cardiac disease, syphilis of the nervous system, and concomitant grave maladies are its chief contra-indications. 3. The intravenous method is the only recommendable one. 4. Repeated medium doses are preferable to a few large ones. 5. Its use is indicated where mercury has failed. 6. In very early cases an attempt at aborting the disease by excising the chancre and administering salvarsan is advisable. 7. In florid secondary syphilis combined salvarsan and mercury treatment should be instituted and persevered with. 8. The severe tertiary cases should also be submitted to this combined treatment. 9. In mild tertiary cases salvarsan recommends itself by the rapidity of the removal of the lesions, and by the long duration of the subsequent latency. 10. Truly malignant cases are as hopeless under salvarsan treatment as otherwise. 11. In late latent cases and in parasyphilis the administration of salvarsan presents no utility.

My sincere thanks are due to Mr. Ernest Lane for the liberal way in which he allowed me to make use of his large clinical material.

SYPHILITIC AORTITIS WITH VALVULAR INCOMPETENCY.[1]

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THE object with which the living patient (if one may for convenience use that unnecessary qualification) is presented, is, to illustrate some points which serve to distinguish the type of aortic valvular disease he represents from that of which the deceased patient was a pronounced example.

CASE 1. *Aortic valvular disease from rheumatic endocarditis.*—The patient is a man, 22 years of age, who has been under my observation at the Great Northern Central Hospital since he was a boy of 13. At a still earlier age he had suffered from rheumatic fever, and when he first came to hospital he had the usual clinical signs of aortic regurgitant disease with consecutive hypertrophy. When 19, incapacitated for all work and suffering much from anginoid pain, a præcordial thoracostomy was performed upon him for me by Mr. Ewen C. Stabb, with great relief to his symptoms. An account of the case was published in THE LANCET of July 4th, 1908. He was also shown at the Polyclinic among other patients about two years ago, and it may interest you to examine him again, being as he is in comparative comfort and earning his livelihood by a light occupation.

My chief reason, however, for showing him now is that he was the most typical case of aortic valvular disease from rheumatic endocarditis which I could at the moment produce in order to indicate the differences between cases of this kind and those of specific aortitis with aortic valvular incompetency, of which I purpose speaking presently. He also illustrates instructively the importance of the purely mechanical factor in heart disease.

We have here the case of a young man giving an early history of rheumatic fever, followed by aortic valvular disease, and the gradual increase of the heart in ventricular bulk and power, to conduct the blood-flow, rendered more difficult by the mechanical valvular lesion. This stage is followed by one in which a powerful ventricle is caged and limited in its effective output of energy by skeletal embarrassment, and exhausted by the effort of raising the resistant chest wall, in addition to driving the blood. Relieved by operation from this additional work, and having now to deal chiefly with the difficulty due to valvular defect, the hypertrophied organ accomplishes its task with comparative ease and with greatly lessened discomfort to the patient.

CASE 2. *Syphilitic aortitis with valvular incompetency.*—The other case, represented here only by his heart, was that of a man, 37 years of age, who was admitted under my care at the Great Northern Central Hospital on May 6th, 1911. More recently he had been man-servant to a gentleman, by whom in illness he had been treated with much consideration. He had formerly been a soldier and served in the Boer War. After his return from that campaign he stated that he had suffered from rheumatism, but had never had rheumatic fever. His general health, he maintained, had always been excellent, and he denied having ever had syphilis. This history, as I shall show, was incorrect on a material point.

In November, 1910, he began to suffer from shortness of breath and was placed in a nursing home in December and the following January. Since that time, and until his admission to the Great Northern Central Hospital, he had done little work. Exertion was stated to induce epigastric pain.

When admitted he was seen to be a well-developed man suffering little when at rest. There was no œdema, dyspnœa, or pain. The organs generally were sound except the heart; with this, the apex beat was visible in the sixth intercostal space, 2 inches to the left of the nipple line. The right limit of cardiac dulness was half an inch to the right of the sternum and the upper limit in the second intercostal space. There was a diastolic bruit audible in a curved line, with the convexity to the left, from the right cardiac base to the apex, and a systolic bruit is noted in the record as audible at the apex itself. The aortic diastolic bruit was, however, the chief sign of valvular defect. The pulse-rate was 90 and the rhythm regular. The temperature was normal.

Until the beginning of June he was apparently benefited by rest and general treatment. The note on June 1st is that the heart's apex beat was an inch and a half to the left of the nipple line, its action quite regular, the pulse-rate 88, and the diastolic bruit rather less distinct, but still loud. The patient expressed himself as feeling much better.

After this, however, his condition became less satisfactory. He lost strength, and anasarca showed itself and steadily increased. From June 15th to July 7th, as cardiac failure was progressive, digitalis in considerable doses was administered. The patient took from 15 to 20 minims of the tincture every four to six hours, but without effect upon the rate or rhythm of the pulse. It was now thought desirable, although syphilitic infection was positively denied, to determine the point by Wassermann's test, which was first employed by the pathologist to the hospital (Mr. Ernest Shaw) on July 6th, when it was found to be positive on this and six subsequent occasions. The result was so typical that the patient's blood was used as a standard in examining other cases of suspected syphilis in the hospital. Specific treatment was used, but with negative result, which was to be anticipated under the circumstances.

On July 26th the patient suddenly became a good deal worse. He had a sudden attack of pain in the præcordia with dyspnœa and extreme pallor. He had, in short, an attack of angina pectoris—the only attack while in hospital—and required vigorous stimulation to recover. Next day he was somewhat better. On July 28th cardiac arrhythmia was observed for the first time. It was of a regular type, although the ventricular pause occurred at the end of series of seven and ten pulsations. The heart-rate was 114 to 120. The arrhythmia did not persist, and at no time was there any ventricular retardation. He gradually sank, showing progressive enfeeblement of pulse, and died on August 2nd.

In view of the anatomical changes found post mortem the following further particulars of the temperature and heart's action may be given. The temperature was normal or slightly subnormal during the first five weeks after admission, with the exception of one day, when it only reached 99·6° F. During this period the pulse-rate ranged from 82 to 100, and only on one occasion reached the latter figure. In the sixth week the temperature reached 100°, when the pulse also on one occasion was 100. The seventh and eighth weeks were uneventful in this respect, the temperature and pulse-rate being as before. In the ninth week the evening temperature was slightly raised, but the highest recorded was 99·6°, and the pulse ranged from 90 to 104. The tenth week began with a subnormal temperature and ended with a slight rise above normal, which then fell for three days to subnormal, but rose on July 25th to 100°, the pulse becoming quicker and feebler and the respiration accelerated. In the lethal exitus, which lasted from July 27th to August 2nd, the temperature reached its highest point (from 100° to 100·8°), the pulse-rate rising from 114 to 132 and the respiration from 30 to 40. On two

[1] Being based on a clinical demonstration given at the Medical Graduates' College and Polyclinic. The demonstration consisted in the exhibition of one patient and the consideration of the case of another, who was only represented by his heart and by microscopic sections prepared from it.

FIG. 1.

FIG. 2.

FIG. 3.

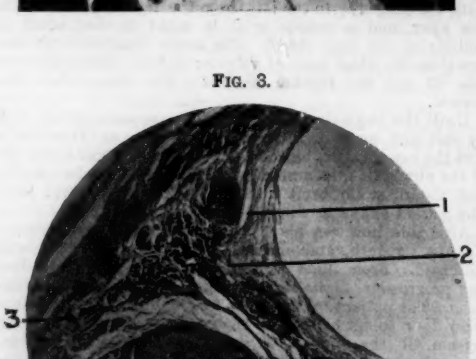


FIG. 4.

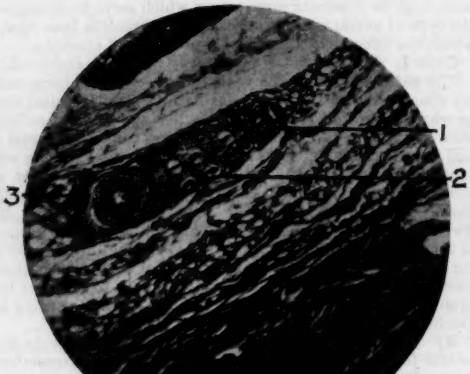
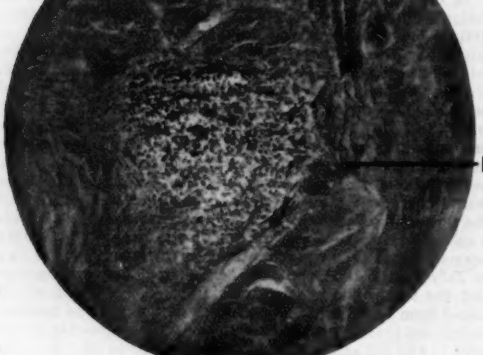


FIG. 5.



DESCRIPTION OF ILLUSTRATIONS.

FIG. 1.—Syphilitic aortitis. 1. Portion removed for examination. 2. Right coronary artery with surrounding puckering. 3. Non-coronary aortic cusp. 4. Mitral valve. 5. Portion removed for examination of the bundle. 6. Left ventricular wall.

FIG. 2.—First portion of the auriculo-ventricular bundle. 1. Fibrosis of the bundle. 2. Endarteritic thickening of blood-vessel. 3. Right limb of the bundle. 4. Portion of the septal cusp of the tricuspid valve. 5. Pars membranacea septi. Swift's objective 1 in.

FIG. 3.—Later portion of the bundle. 1. The large obliterated artery with obliterated branch. 2. The right limb of the bundle. 3. The left ventricular limb of the bundle, showing considerable muscular atrophy. 4. Left ventricle. Swift objective $\frac{1}{2}$ in.

FIG. 4.—Atrophied nerve cells in sclerosed ganglion. 1. Almost obliterated artery. 2. Atrophic cells. 3. Larger artery almost obliterated. Swift objective $\frac{1}{2}$ in.

FIG. 5.—Gumma in aortic wall. 1. Gumma. Swift objective $\frac{1}{2}$ in.

days between these dates the temperature fell to subnormal and the pulse-rate and respiration fell with it.

Necropsy.—At the post-mortem examination—which was made by the pathologist to the hospital—a little fluid was found in both pleuræ. The lungs were congested, dry, and tough. There were several hæmorrhagic infarcts visible under the pleuræ, and one of them was decolourised and softened and had evidently existed for some days. The pericardium contained a little clear fluid; there was a large milk spot on the anterior surface of the heart and a few petechiæ behind. From the right auricular blood the bacillus coli communis was grown.

The heart itself weighed, with contained blood, 38 oz., and without it 25 oz. The organ was firm and heavy, and the muscle rather paler than normal. The dextral valves were normal. The left ventricle was much dilated, and the mitral orifice admitted three fingers and was six inches in circumference. The cusps were rather thickened and narrow. The left auricle was large. The coronary arteries opened higher up in the aorta than usual, and were small both at their orifices and in calibre.

The aorta was extremely atheromatous and rather dilated, and showed two small bulgings just above the valves. The surface of the vessel was much puckered, as the photograph (Fig. 1) shows, and there were no calcareous patches. The valves were distorted and incompetent. The left pneumogastric nerve as it approached the heart was markedly thickened. The abdominal organs showed no other change than resulted from a passive congestion.

Microscopical examination.—I later examined portions of the heart and aorta microscopically, with the following results:—

The arteries, chiefly in the auricles and interauricular septum, in the pars membranacea septi, and in the peri-aortic cellular tissue, showed advanced obliterative endarteritis. In one section a large artery and its branches, immediately above the auriculo-ventricular bundle, were completely obliterated and showed advanced connective tissue production and total disappearance of all muscular elements. The auriculo-ventricular bundle was likewise shot with an excess of veins.

While the ventricular muscle showed here and there marked fibrosis the auricular muscle and interauricular septum were most affected by fibrotic changes with interstitial nucleolysis. The first portion of the auriculo-ventricular bundle, before definite bifurcation (Fig. 2), shows advanced sclerosis with nucleolysis, and especially in its *right* half. The muscular element itself is exsanguinated and atrophied in parts. After the bundle has definitely bifurcated, in the neighbourhood of the completely obliterated large artery above referred to (Fig. 3), the same atrophic condition of muscle is observable, but most so in the *left* ventricular limb of the bundle. Ganglionic nerve cells, lying between vessels largely obliterated, show atrophy of the cell elements (Fig. 4), and in other parts nerve bundles exhibit a hyper-nucleolysis. The thickened pneumogastric nerve shows well-marked gummatous nucleolytic deposits in its fibrous sheath.

Gumma may, of course, also occur in the musculo-fibrous coat of the aorta, as is shown in Fig. 5, taken from another case of syphilitic aortitis, which died from rupture of an abdominal aneurysm. The sino-auricular ganglia were missed in the case I have related at length, in an endeavour to procure a horizontal section, but I have found some cells of the ganglia to be atrophic in another case of cardiac syphilis, without any disorder of cardiac rhythm resulting.

Remarks.—Syphilitic disease of the heart and aorta, apart from aneurysm, has, since Ricord's day, been studied by many authors. In THE LANCET in 1897[2] there is an excellent article on syphilis of the myocardium by Dr. Sidney Phillips, who refers to previous work on the subject. Sir William Osler and Dr. Mitchell Bruce dealt with the matter in their Lumleian lectures,[3] and Sir Clifford Allbutt has, by publications extending over a lengthened period, made the "suprasigmoid portion" of the aorta his own.[4] Foreign medical literature also deals with the condition fully.

These facts notwithstanding, syphilitic aortitis with valvular incompetency, though a distinct clinical entity, is a type of valvular disease which is not always recognised as such, although, with reasonably careful investigation and reflection, it should not fail to be detected. A comparison of the two cases to which I have referred above serves to indicate the chief elements in clinical diagnosis. Of the rheumatic type I have already spoken.

The patient affected with specific aortic valvular disease is usually a man, and generally comparatively young, but not a youth. His age varies from 30 or 35 to about 50. Even on careful investigation, and as a rule, no history of rheumatic or scarlet fever is to be elicited. Nor is there a history of physical disability in earlier life. The patient has usually followed some active calling, and often that of a soldier or sailor. Ultimately he becomes dyspnœic on exertion, frequently complains of attacks of pain in his chest or epigastrium, and on examination reveals aortic valvular disease with consecutive enlargement of the organ.

If he fail to respond to treatment (as he frequently does at the stage at which he presents himself) and die, the necropsy reveals an atheromatous aorta and puckering of the valves, which, considering the comparative youth of the patient in most cases, and an absence of the history of the usual acute infections which induce heart disease, leads, even when syphilitic infection is denied, to a diagnosis of the consequences of that condition. More minute investigation of the textures confirms the correctness of this view.

The clinical history and anatomical examination of the case I have related exemplify these facts in a typical manner. The case is also interesting because, although there were well-marked changes in the auriculo-ventricular bundle, such as have been described as occurring in cases exhibiting "heart-block" or the dissociated action of the auricles and ventricles, that condition was not present in this instance. Had it occurred partially or completely, the anatomical conditions found would have been considered by some quite sufficient to account for that state.

Dr. Thomas Lewis has collected and carefully analysed 50 cases of complete or partial heart-block, in 11 of which syphilitic invasion or affection of the auriculo-ventricular bundle was regarded as causal of that condition.[5]

The anatomical changes, whether in nerve, muscle, or interstitial tissue, appear to be largely due in cardiac syphilis to that condition of the blood-vessels so characteristic of this state, which interferes with the due nutrition of the structures affected. The pulmonary infarction and bacillary heart blood of the case I have related was evidently a so-called terminal infection and had no bearing on the general clinical history.

Treatment.—As Sir William Osler has remarked with regard to the treatment of aortic aneurysm of specific origin, it is its prevention by suitable and sufficient treatment of the early infection which is most important. This doubtless holds good also for other ultimate manifestations of cardio-vascular syphilis. But to prevent is not to treat either aneurysm or aortitis. The frequently observed beneficial effects of the treatment of late manifestations of syphilis by mercury and the iodides justify, nevertheless, the expectation of benefit from this line of treatment in the type of case with which we have been dealing. But when cardiac failure has occurred in an advanced case such as I have related, little good can be expected to follow the use of any remedy, the anatomical changes described being permanent and important structures atrophied and impaired in function.

Although common experience teaches us that cardiac failure with a mitral lesion is more amenable to treatment by the digitalis group than a similar failure with aortic lesion, we know that digitalis has at times a well-marked effect in reducing the heart-rate in aortic valvular disease. The failure of these agents to do so in the case discussed has a certain interest, as it has been suggested that lesions of the bundle of His render the retardant action of the digitalis group on ventricular action more probable. Such a *modus operandi* of these agents is, however, at present, merely a supposition on the part of those who entertain it.

Upper Berkeley-street, W.

[2] THE LANCET, Jan. 23rd, 1897, p. 223.

[3] THE LANCET, March 26th, 1910, p. 839; and THE LANCET, July 8th, 1911, p. 69.

[4] System of Medicine, vol. vi.

THE CLINICAL SIGNIFICANCE OF X RAY AND RADIUM MEASUREMENTS.[1]

BY S. RUSS, D.Sc.,
BEIT MEMORIAL RESEARCH FELLOW.

(*From the Cancer Research Laboratories, Middlesex Hospital.*)

IT is desirable for clinical and experimental biological purposes to have some comparative measurements between the intensity and character of the radiation from an X ray bulb working under specified conditions and that from a known quantity of radium. The character of the radiation from both is complex. Under whatever conditions an X ray bulb is working the radiation coming away from it is heterogeneous, consisting of rays varying in their penetrating power. The radiation from radium (and the short-lived products in equilibrium with it, Ra emanation RaA, RaB, and RaC) consists of alpha, beta, and gamma rays, which are also heterogeneous in type.

Measurements have been made of the penetrability through

[5] The Mechanism of the Heart Beat, 1911, pp. 102-106.

[1] A paper read before the Roentgen Society on Jan. 2nd, 1912.

aluminium of the X rays emitted by a bulb under varying conditions of spark gap, and compared with the penetrating power of beta and gamma rays through the same substance. The alpha rays from radium are completely stopped by 0·05 mm. aluminium, so that under most conditions of irradiation their effects may be neglected.

The intensity of X rays has been measured by the ionisation that they produce in the air of an electroscope. This has been compared with the ionisation produced in the same electroscope by the gamma rays from a known quantity of radium.

The last part of the paper affords some evidence that the biological effects of X, beta and gamma rays are proportional to the ionising action of these rays.

Method of Measurement.

The character of the X rays from a bulb under varying conditions of spark gap was determined by means of the apparatus in Fig. 1. A beam of X rays enters the electroscope through an aperture A in a lead block which was lined with aluminium to eliminate any secondary X rays from the lead. The beam on entering the electroscope ionised the air beneath the metal plate B which was connected to a gold leaf system, the rate of fall of the gold leaf serving as a measure of the amount of ionisation produced by the rays. The mica windows allowed of the accurate alignment of the anode. By placing aluminium screens at A in the path of the beam the penetrability of the rays is found by the change in the ionisation thereby produced.

FIG. 1.

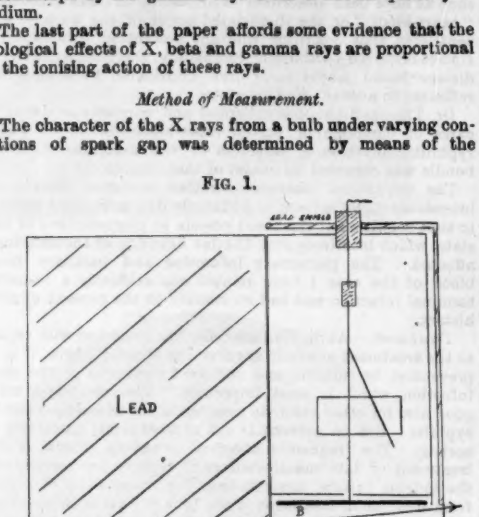


Diagram of apparatus.

The criterion for the homogeneity of X rays is that they are absorbed according to an exponential law. Corresponding to any thickness of matter traversed by the rays the ionisation has a certain value. If the logarithms of the values of the ionisation are plotted as ordinates and the thickness of matter traversed as abscissæ, the points on the diagram will lie on a straight line if the absorption of the rays has followed an exponential law. This test when applied to the radiation from an X ray bulb reveals the heterogeneous character of the rays, as may be seen from Fig. 2. Three typical cases are exhibited, Curves I., II., and III., corresponding to spark gaps of 4·5, 8·5, and 19 cm. respectively, the same current flowing through the primary in each case. At 19 cm. spark gap the beam is almost homogeneous after 1·12 mm. of Al have been traversed, as may be seen from the approach of the curve to a straight line. On the same diagram are drawn corresponding curves for the beta and gamma rays from radium, use being made of data obtained by Kovarik and McLelland. It will be seen that whereas the beta rays are rather more easily absorbed by aluminium than the X rays excited by a very "soft" bulb, the gamma rays are very much more penetrating (about 30 times actually) than the X rays from a very "hard" bulb.

The data corresponding to the three cases considered are collected in Table I.

TABLE I.—*Absorption of X Rays by Aluminium.*

Current.		Spark gap.	—
Primary.	Secondary.		
4·5 ampères.	0·9 milliampères.	4·5 cm.	I.
„ „	0·45 „	8·5 „	II.
„ „	0·15 „	19 „	III.

Ionisation after Passing through Aluminium.

	0	0·56 mm.	1·12 mm.	1·68 mm.	2·24 mm.	2·8 mm.	3·36 mm.
I.	100	25·1	15·7	9·8	8·5	7·5	—
II.	100	34·7	23·0	15·1	12·7	10·6	9·6
III.	100	40·2	29·2	24·4	21·2	17·5	15·3

Percentage Absorbed by 0.56 mm. Al after Rays have passed through the following thicknesses:—

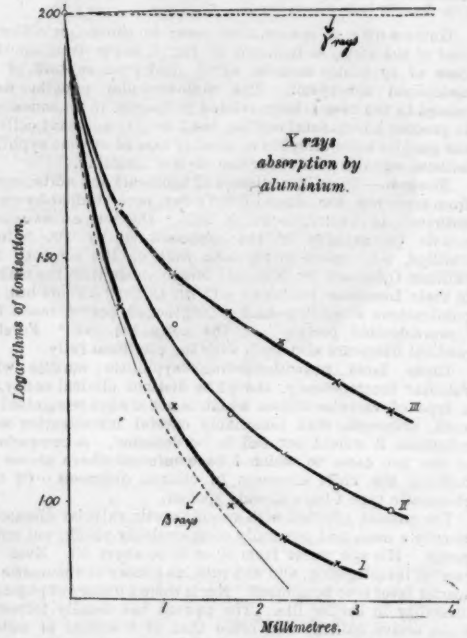
	0	0·56 mm.	1·12 mm.	1·68 mm.	2·24 mm.	2·8 mm.
I	74·9	37·4	37·6	13·2	11·2	—
II.	65·3	33·7	34·3	15·9	16·1	9·8
III.	59·8	27·2	16·4	13·1	17·4	12·5

For the whole series of observations the current through the primary coil was kept constant. If this were changed the type of radiation from the bulb would be altered.

The Coefficient of Absorption of the Rays.

It is convenient to refer to the penetrating power of a beam of rays in terms of a coefficient[2] (λ) the numerical value of

FIG. 2.



Curves showing heterogeneous character of the rays.

[2] The value of λ is obtained as follows: The intensity of a homogeneous beam in its passage through matter may be represented by the equation—

$$I = I_0 e^{-\lambda d}.$$

Where I_0 is the initial ionisation produced by the beam and I the ionisation produced after a thickness of matter d has been traversed. Hence—

$$\lambda = \frac{2{\cdot}302\,(\log_{10} I_0 - \log_{10} I)}{d}.$$

which is inversely proportional to the penetrability of the beam. A large value of λ corresponds to an easily absorbed beam and a small value to a very penetrating one. λ also varies according to the nature of the absorbing material. If after traversing 1 cm. of matter the ionisation in the electroscope is reduced to one half its initial value, $\lambda = 0{\cdot}69$ cm.$^{-1}$. This is just about the mean value found for the absorption by fatty tissue (breast) of a beam of X rays of "medium" hardness (9·5 cm. spark gap). For a "hard" beam, previously screened by 1·12 mm. aluminium, the value of λ for the same tissue is $0{\cdot}45$ cm.$^{-1}$, and this value is used in a later section to illustrate the fall in the intensity of X rays in their passage through the tissues. It is clear that when dealing with a heterogeneous beam the value of λ varies with each succeeding layer of matter traversed, whereas it is a constant if the beam is homogeneous.

Approximate values of λ for the maximum part of the radiation corresponding to Cases I., II., and III. have been obtained after the very soft components were cut out. These are collected in Table II., which also contains values of λ for the beta and gamma rays from radium.

TABLE II.—*Values of the Coefficient of Absorption (λ in cm.$^{-1}$) for Aluminium.*

Beta rays	X rays under conditions of spark gap. 4·5 cm.	8·5 cm.	19 cm.	Gamma rays.
75–13·5	..... 8·1	..... 5·6	..... 2·9	..... 0·104

The coefficient of absorption λ being inversely proportional to the penetration of the rays, the enormous difference in the penetrating power of beta and gamma rays is easily appreciated by a comparison of their coefficients.

The Ionisation caused by X and Gamma Rays.

The ionisations caused by unscreened X rays at a spark gap of 9 cm. and by the screened rays at a spark gap of 19 cm. were measured and compared with that produced by the gamma rays from a known quantity of radium. The results are collected in Table III., from which may be seen the quantity of radium required to give the same ionisation in the electroscope by means of gamma rays, as that produced by an X ray bulb working under the specified conditions. The ionising effect of the beta rays from radium being about 50 times that of the gamma rays, the beta ray equivalence may be taken as one-fiftieth of the numbers given for the gamma rays.

TABLE III.—*Comparison of Ionisations.*

Gamma Rays.

Quantity.	Distance.	Leak.	(Distance)^2 × leak per grm. radium.
Emanation from 18·5 mgrm. Ra Br_2	19 cm.	0·51 div/min.	17,000
0·357 grm. Ra Cl_2	94 ,,	0·54 ,,	17,450
		Mean ...	17,225

X Rays.

Spark gap.	Screen.	Distance.	Leak.	(Distance)^2 × leak.	Gamma ray equivalent in grms. radium.
9 cm.	None.	94 cm.	105 divs/min.	928,000	53·8
19 ,,	1·12 mm. Al.	,,	17·3 ,,	153,000	8·88

Clinical Considerations.

1. *Surface conditions of irradiation.*—The unscreened X rays from a bulb running under a spark gap of 9 cm. are equivalent in ionising action to the gamma rays from 53·8 grm. of radium, if placed in the same position as the anode (*vide* Table III.). Experimentally the anode is not usually nearer than 10 cm. from the surface to be irradiated, whereas an application of radium may be made directly on the part in question, and therefore one half of the total radiation is utilised. Hence, comparing the intensity of irradiation per square centimetre of surface under these conditions, and taking the area of the sphere with the anode at centre as 1250 sq. cm., we have—

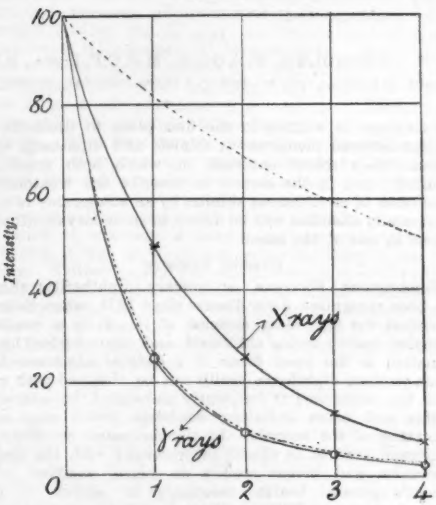
X ray intensity per sq. cm. = gamma rays from $\frac{53{\cdot}8 \times 2}{1250}$ grm. radium per sq. cm.
= gamma rays from 86·1 mgrm. radium per sq. cm.
= gamma rays from 146·6 mgrm. radium bromide per sq. cm.
= beta rays from 2·93 mgrm. radium bromide per sq. cm.

Assuming the simplest relation between the biological effects of the rays and the ionisation that they produce, it might be expected that the irradiation of thin layers of tissue by X rays from a "medium" bulb or by the beta rays from 2·93 mgrm. of radium bromide per square centimetre, for the same interval of time, would lead to similar biological results under the conditions specified above.

Some experiments have recently been completed by Dr. B. H. Wedd and myself (which were communicated to the meeting of the Pathological Society of Great Britain and Ireland on Jan. 5th, 1912) upon the effect of these different rays on inoculable mouse tumours.

With an intensity of 2·81 mgrm. of radium bromide per square centimetre the effect of the beta rays upon the tumours for various times of exposure bore a marked resemblance to the effects under "medium" X rays for a similar time range. With the above quantity of radium an exposure of the tumours for 18 hours to the gamma rays

FIG. 3.



Curves showing diminution in intensity of rays in passing through the tissues.

failed to give definite evidence of any biological effects. Subsequent calculation on the above lines indicated that an exposure lasting 50 hours would have been necessary.

2. *Deep-seated conditions of irradiation.*—Under these circumstances a "hard" bulb would be used and the soft constituents of the beam of X rays may be cut out by 1·12 mm. of aluminium. Reference to Table III. shows that for a screened bulb running at 19 cm. spark gap the anode of which is at a distance of 10 cm. from the surface in question—

X ray intensity per sq. cm. = gamma rays from $\frac{8{\cdot}88 \times 2}{1250}$ grm. radium per sq. cm.
= gamma rays from 24·3 mgrm. radium bromide per sq. cm.

This is the condition holding at the surface. The intensity of the X rays in passing through the tissue diminishes owing to the increase in distance from the anode, and to the absorption of the rays. The variation in intensity due to the increase in distance, assuming the inverse square law to hold, is shown by the upper dotted line in Fig. 3, and when the

absorption is taken into account the true diminution of intensity through successive layers of tissue is shown by the full line curve. The value for λ is taken as $0 \cdot 45$ cm.$^{-1}$ (*vide supra*).

If a disc 1 cm. in diameter be covered with radium the gamma radiation per square centimetre vertically below it decreases with the distance in the manner indicated by the lower dotted curve in Fig. 3. Taking the absorption of the rays by the tissue into account the full line curve is obtained. The rapid fall in the intensity through succesive layers is almost entirely due to the increase in distance, the absorption by the tissue being very small.

It will be seen that starting with equivalent intensities at the surface there would, under the experimental conditions cited, be a more marked diminution in the intensity of the gamma rays than in the X rays, despite the fact that the absorption of the rays by the tissues was nearly 30 times greater in the latter than in the former case. It must be understood that this quantitative estimation of the amount of radiation received by different layers of tissue is not a general one, but refers to the particular case in question. If the radium were deposited over a larger area the fall in intensity through the tissues would not be so large.

MEMBRANOUS RHINITIS:

ITS RELATION TO DIPHTHERIA AND ITS TREATMENT BY AUTOGENOUS VACCINE.

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THIS paper is written in the first place to illustrate the relation between membranous rhinitis and diphtheria by an account of a school outbreak in which both conditions occurred; and in the second to describe the treatment of three cases of membranous rhinitis by an autogenous vaccine. Incidentally attention will be drawn to secondary diphtheritic lesions in one of the cases.

General Features.

Membranous, fibrinous, or primary diphtheritic rhinitis has been recognised as a disease since 1871, when Schuller published the first clear account of it. It is a condition occurring mainly during childhood, and characterised by the formation in the nasal fossæ of a definite membrane from which virulent diphtheria bacilli can be obtained with ease. With the membrane is frequently associated an extremely profuse and often irritating discharge which may cause excoriation of the nostrils. In the untreated condition the membrane is white, is closely incorporated with the mucous membrane, and bleeds readily on being swabbed. The patient's general health commonly is almost or quite unimpaired, the condition suggesting only a persistent severe cold in the head, and the paralytic and cardiac sequelæ of ordinary diphtheria are never found. This primary diphtheritic rhinitis is of course totally distinct from the serious secondary form occurring in naso-pharyngeal diphtheria.

Cases of the disease have been reported by Major, Seifert, Chapin, Gluck, Raulin, Gerber, Podack, Pluder, Wishart, Abel, and others. A complete bibliography of these is given by Ravenel[1] up to 1895 and by Lack[2] up to 1899, while Cartaz[3] gives a few more recent references up to 1908. Since then other cases have been reported at intervals, one of the latest being that of Ellett.[4] Of the monographs on the subject those of Lack[2] and of Gerber and Podack[5] are among the most complete and authoritative.

The identity of the organism causing membranous rhinitis with that causing diphtheria has been demonstrated repeatedly. The researches of Lack[2] and of Meyer[6] in this respect are among the most complete. In both the morphological, cultural, and animal tests were made. The organism found in membranous rhinitis is frequently of very marked virulence, and is in all cases virulent in some degree.

Frequency.

The frequency of the condition is not sufficiently recognised, a fact due doubtless in part to inadequate examination and in part to the characteristic membrane being hidden by the profuse secretion which accompanies it. Lack[2] found that as many as 2¼ per cent. of the cases seen at the throat and ear department of the Paddington Green Children's Hospital in 1897 had membranous rhinitis, while Potter[7] believes that this affection forms 2 per cent. of all cases of acute rhinitis.

Duration.

Its duration is very variable. The average is given as three weeks (Potter, quoted by Clifford Allbutt[8]), but in many instances the disease is extremely chronic. Out of 36 cases recorded by Lack the most chronic recovered in 10, 12, 14, and 18 weeks.

Relation to Diphtheria.

The relation of membranous rhinitis to diphtheria has been a much-debated point. Some observers hold the view that the two diseases are quite distinct and that one cannot give rise to the other, while in the opinion of others they are closely related, each being capable of causing the other. Lack,[2] from a careful analysis of a considerable number of cases, concludes that membranous rhinitis has a special tendency to reproduce itself and not to produce diphtheria. He admits, however, that very rarely diphtheria may give rise by direct infection to fibrinous rhinitis. Parker,[9] again, states that "membranous rhinitis is infectious as membranous rhinitis and diphtheria as diphtheria." For the second view Pluder[10] and others record cases where contacts with membranous rhinitis have developed definite diphtheria with diphtheritic exudate on the tonsils. *A priori* the fact that the bacillus is identical for the two diseases suggests strongly that the one will be capable of giving rise to the other. Of the two, membranous rhinitis would appear to give the most fruitful opportunities of infection, from the abundance of infective nasal discharge which must almost inevitably be distributed broadcast. The nose is likely to be a frequent channel of infection, from the readiness with which in young children the lips, face, fingers, clothes, handkerchief, books, &c., become contaminated with nasal secretion. The extreme importance of nasal discharge in the spread of diphtheria, and especially the importance of membranous rhinitis as a source of a discharge of virulent nature, has been emphasised by one of us[11] on a previous occasion.

We would here urge a very important practical point in the taking of swabs from cases of fibrinous rhinitis. The nasal discharge should be wiped away and the swab firmly applied directly upon the membrane. At times the nasal secretion gives negative results.

A School Outbreak of Diphtheria.

In reference to the probable influence of membranous rhinitis in the spread of diphtheria, attention is called to the following school outbreak of diphtheria.

Prior to the cases about to be described, which began during September, 1911, there had been no notified or suspected diphtheria in the school during the year. Throughout the outbreak there was very little diphtheria in Brighton as a whole. The first group of cases, occurring between Sept. 8th and Oct. 4th, was limited to Class IV. of the infants' department, and was as follows:—

1. On Sept. 8th a girl, A, developed a sore throat, but remained at school till Sept. 11th. She was then excluded for three weeks and returned to school on Oct. 2nd.
2. On Sept. 11th a girl, B, developed diphtheria, for which she was admitted to the Fever Hospital on Sept. 13th. She had then abundant exudate on both tonsils. The throat swab was positive, the nose swab negative.
3. On Sept. 12th a girl, C, stayed away from school with a sore throat and exudate on the tonsils. She was visited at home, but the throat-swab taken was found to be negative. She returned to school, after three weeks' exclusion, on Oct. 2nd.
4. On Sept. 13th a boy, D, had a sore throat. He attended school on Sept. 14th, but was then excluded for three weeks. He returned on Oct. 4th.
5. On Monday, Oct. 2nd, a girl, E, fell ill with diphtheria and was taken to the Fever Hospital on the same day. She had then exudate on one tonsil. The throat swab was positive, the nose swab negative. E's last attendance at school was on Friday, Sept. 29th.

As a result of this case following on the previous suspicious series the school was visited on Oct. 4th and swabs taken from all children in Class IV. exciting suspicion. Those children in particular were picked out who had either a history of recent sore-throat or a sore or running nose. The results of the bacteriological examination were as follows:—

1. Throat swabs from C and D were positive, from A negative, but three weeks had elapsed since the sore-throat in this case.

2. A girl, F, was found to be suffering from definite membranous rhinitis with copious nasal discharge. The nasal swab was positive.
3. A boy, G, had a positive nasal swab. This boy, who was taken to the Fever Hospital on Oct. 4th, was an ordinary chronic carrier in good general health. After suitable local treatment he was discharged free from diphtheria bacilli on Nov. 2nd.

Thus between Sept. 8th and Oct. 4th the following cases had occurred in one class of about 50 children in a school which had apparently been free from diphtheria for many months: four cases of diphtheria, one of sore-throat yielding a negative swab three weeks after onset, one nasal diphtheria carrier without obvious disease, and one case of membranous rhinitis. Between these dates no other cases of diphtheria, certain or suspected, occurred in the school.

It is unfortunately impossible to date the onset of the membranous rhinitis in F. The association, however, of membranous rhinitis and diphtheria is so close as regards time and place that it suggests strongly that the two diseases did not arise independently of one another.

A fortnight later three further cases of diphtheria occurred in the infants' department of the same school. On Oct. 14th H in Class V. developed a severe attack, while about Oct. 22nd P in Class IV. and R in Class III. had mild attacks.

As the result of an examination of school children on Oct. 24th a second group of cases, this time in Class V. of the infants' department, was isolated as follows:—

1. A boy, J, who had been absent on Oct. 20th with a sore throat gave a positive throat swab.
2. Three children, K, L, and M were found in Class V. with definite membranous rhinitis. The nose swab in each case was positive. There was no evidence of the date of onset in K, but she had at the time of the examination a sister under medical treatment at home for sore-throat. A swab taken by the doctor from this sister was negative. L had had a sore throat on Oct. 21st, and at the time of examination had profuse nasal discharge and left otorrhœa. M had had nasal discharge for some weeks before Oct. 24th.

This second group, comprising three cases of membranous rhinitis and two of diphtheria occurring in one class of about 50 children, suggests two conclusions: first, that membranous rhinitis, as maintained by Lack, is specially prone to produce a similar disease in others, as indicated by the occurrence of three cases in one class; and secondly, that either membranous rhinitis may give rise to diphtheria or else *vice versâ*. The first conclusion is somewhat strengthened by the negative evidence resulting from the examination, at about the same date, of all children in the infants' department of another school. The children were examined especially for the presence of membranous rhinitis, and no case was found, so that three cases occurring in a single class of a department may be considered as an unusually large proportion.

Bacteriological Diagnosis of Three Cases of Membranous Rhinitis Admitted to the Brighton Fever Hospital.

It may be well, before giving details of the three cases under review, to summarise their bacteriological diagnosis.

Cultures were made on blood serum and pure sub-cultures obtained on the same medium from (*a*) F's nose, (*b*) M's nose, (*c*) M's whitlow, (*d*) L's nose, (*e*) L's left ear (otorrhœa). For each of these five subcultures the following facts held good:—

1. *Cultural characters.*—(α) The growths on all the ordinary solid media were those characteristic of the diphtheria bacillus.

(β) In broth the growth was very scanty, but on subculture growth was better. The broth remained clear, and a fine deposit was formed.

(γ) Acid was not at first obtained with litmus glucose broth. This was due, however, to difficult growth in broth. After subculture in broth, as suggested by Graham Smith,[12] an acid reaction was readily obtained.

(δ) Indol (without addition of nitrite) was obtained in peptone water after incubation for a week at 37° C.

2. *Morphology and staining.*—A Gram-positive beaded bacillus of the long variety, with clubbed ends and polar staining, showing typical involution forms in 24–48 hours, and staining deeply with methylene blue.

3. *Virulence.*—The virulence was kindly tested by Dr. Arthur Eastwood, who reports that "all the five cultures are of high virulence towards guinea-pigs, death being in each case produced in from 24 to 30 hours with a loopful of culture weighing about 3½ milligrammes."

Vaccine Treatment.

Few cases are recorded of vaccine treatment in diphtheritic infections. Allen,[13] Graham Smith,[12] Lack,[14] StClair Thomson,[15] and Clifford Allbutt[2] do not mention it in discussing the treatment of membranous rhinitis; nor was the method suggested in a recent discussion[16] on nasal diphtheria at a meeting of the New York Academy of Medicine at Philadelphia.

Petruschky[17] tried autogenous vaccines of diphtheria bacilli in 6 cases of chronic diphtheritic infection of the fauces with successful results, in 4 of the cases after one or two doses, in the other 2 after repeated injections extending over many months. The vaccine used was an emulsion of the bacilli in sterile saline (1 in 100), and the doses were from 0·1 to 0·5 c.c., given subcutaneously. More recently Smith[18] had a successful result after giving two doses of an autogenous vaccine to a chronic diphtheria carrier whose fauces had been positive for 22 weeks. Here a combined diphtheria and staphylococcus vaccine was given, the first dose of diphtheria bacilli being 6,000,000 and the second 8,000,000.

Watson Williams[19] and Bosanquet and Eyre[20] mention vaccine treatment in persistent infection of the throat and nose, but do not give instances. The latter recommend doses of 5 to 10 millions at intervals of five to seven days, and state that the bacilli disappear after one or two doses. Wright[21] considers that vaccine treatment would probably be beneficial. Goodall has used triturated diphtheria bacilli with success (quoted by Hewlett[22]).

The three cases of membranous rhinitis received into the Brighton Fever Hospital each underwent a course of treatment with an autogenous vaccine of diphtheria bacilli.

Preparation of vaccine.—The patient's own organism was obtained in a pure state by successive subcultures on blood serum. The pure culture was incubated at 37° C. for 48 hours, and then emulsified in sterile normal saline. After thorough shaking the emulsion was tested against normal human blood to determine its concentration. Counting was found to be unusually difficult, as it was at times very hard to distinguish the round and irregularly globoid involution forms from blood platelets. The use of a Thoma-Zeiss pipette and slide would doubtless have given more accurate accounts. After the count the emulsion was heated to 60° C. for half an hour, and appropriate amounts withdrawn and injected into rubber-capped bottles containing 0·5 per cent. phenol.

Doses were given usually at intervals of five to seven days; but owing to unavoidable delay in making up further doses of vaccine it was at times impossible to adhere to this rule strictly. Neither general reaction nor reaction at the site of inoculation, except for occasional very slight redness, followed any one of the doses. Throughout the vaccine course all three cases had the nose syringed twice a day with a dilute alkaline solution. This was omitted for 24 hours before the taking of swabs.

CASE 1.—F, a girl, aged 5 years. Admitted Oct. 6th, 1911.
History.—No history of onset obtainable.
On admission. A rosy-cheeked girl; general health good; child in high spirits. Grey membrane lining both nasal cavities, seen only after the superficial secretion had been wiped away. The nose bled readily when a swab was taken. Nasal discharge thick, yellow, and very profuse. Tonsils enlarged and adenoids in pharynx, which showed no recent signs of inflammation. Nasal swab positive, the organism being highly virulent to guinea-pigs. Throat swab negative.
For one month plugging of nostrils with cotton-wool soaked in diphtheria antitoxin was tried, together with alkaline nasal douches. There was, however, no obvious diminution in membrane or rhinorrhœa, and both nostrils still gave an almost pure culture of diphtheria bacilli on blood serum.
Vaccine treatment.—A vaccine was prepared from a pure diphtheria culture from the nose and given as follows: Nov. 9th, 5 millions (5 m.); Nov. 15th, 10 m.; Nov. 20th, 40 m.; Nov. 27th, 80 m.; Dec. 2nd, 100 m.; Dec. 9th, 200 m.; Dec. 20th, 400 m.
The first dose had no perceptible effect. From the second dose onwards the membrane and the rhinorrhœa diminished. No membrane was seen after the third dose, and after the fifth dose the nasal discharge had almost disappeared. The nose was still positive after the third dose, but became negative after the fourth, and remained negative for 19 days, during which interval six swabs were examined carefully. For the last few days of this interval glairy mucus began to accumulate in the nose, the mucous membrane over the inferior turbinate bones looked rather red, and mucus was seen in the pharynx. At the same time, on Dec. 19th, the nasal swab again contained diphtheria bacilli in small numbers. No membrane was seen in the nose. The nose still remained positive after a further final dose of 400 millions.

This result suggests that an autogenous vaccine has a rapid action in the removal of adherent membrane and in lessening the nasal secretion which accompanies it. But since at the onset of a mild catarrh of the naso-pharynx the bacilli reappeared in small numbers in the nose and were unaffected by a further large dose of vaccine, it would seem that the

latter loses its potency when the bacilli are no longer lodged in close vascular relation with the mucous membrane, but are present chiefly in the free mucous secretion. This loss of potency is perhaps only to be expected, seeing that the chief paths by which antibodies can reach the bacilli have been largely obliterated by the disappearance of the membrane with its vascular and lymphatic connexions.

It is also possible that the diphtheria bacilli found during the catarrh were not descendants of the original inhabitants of the nose, but a fresh strain derived from some other patient in the ward. Such cases of bacterial cross-infection occur occasionally in diphtheria wards. A patient who on admission has a negative nose swab may after weeks give a positive result. This may occur also in non-diphtheritic cases nursed in a diphtheria ward, in whom there is no possibility of the bacilli having spread to the nose direct from the patient's own throat. Had such infection *ab extra* happened in the patient in question it might offer another explanation of the inefficacy of the vaccine at this stage, since the vaccine would no longer be autogenous to the fresh infection. That cross-infection occurred in this case can, however, only be a surmise, and perhaps an improbable one.

CASE 2.—M, a boy aged 5 years. Admitted Oct. 24th.

History.—"Profuse running at the nose for some weeks before admission."

On admission.—An anæmic child, with large tonsils and an adenoid facies. No signs of recent inflammation in the fauces. Profuse yellowish nasal discharge, excoriating the angles of the nostrils. On wiping away this discharge definite membrane could be seen lining the outer walls of the nasal cavity. The nasal mucous membrane bled very readily on being touched. The face was dotted with small superficial sores. The throat swab was negative, the nose swab positive, giving almost a pure culture of virulent diphtheria bacilli. Two days after admission a whitlow developed which on incision gave a nearly pure culture of virulent diphtheria bacilli.

Vaccine treatment.—The organism from the whitlow was used for preparing a vaccine, as it happened to give a pure culture readily. It was judged that the whitlow was due to direct infection from the nose, since the boy was in the habit of biting his nails, and his fingers were rough and torn, giving abundant places of lodgment for infected nasal discharge.

The doses given were as follows: Nov. 3rd, 5 millions (5 m.); Nov. 9th, 10 m.; Nov. 15th, 20 m.; Nov. 27th, 50 m.; Dec. 2nd, 100 m.; Dec. 10th, 200 m.; and Dec. 21st, 400 m.

The whitlow was still discharging at the time of the first dose. On the day after the first injection pus reaccumulated in the whitlow, which, however, healed extremely quickly on removal of the nail. On the day following the third injection a second whitlow appeared on another finger, yielding, as in the first instance, diphtheria bacilli. This also healed in the course of a day or two after incision. From the second dose onwards the membrane and the rhinorrhœa diminished, until by the beginning of December the nose was almost dry, and no membrane could be seen. The nasal swab was negative after the third injection. From Nov. 18th to Dec. 16th seven consecutive nasal swabs were negative. The nose then became rather blocked again for a few days and the swab showed diphtheria bacilli in small numbers. These were not abolished by a further dose of 400 millions. No membrane could be seen at this stage.

This case suggests the same conclusions as were advanced in regard to Case 1. It also seems to indicate that an autogenous vaccine is of value in curing diphtheritic whitlows. It will be remembered that the vaccine used in this case was prepared from a whitlow.

CASE 3.—L, a boy aged 5 years. Admitted Oct. 24th.

History.—Sore-throat three days before admission.

On admission.—Child anæmic, adenoid facies very marked. Tonsils rather large, no exudate. Very profuse thick nasal discharge, hiding a thin membrane lining the outer walls of each nostril. Profuse left otorrhœa.

Diphtheria bacilli were grown from the throat swab; from the nose swab in almost pure culture; and from the ear discharge also in great profusion. Cultures from the nose and from the left ear were proved to be highly virulent to guinea-pigs.

Vaccine Treatment.—A vaccine was prepared from the nose. Doses were given as follows:—Nov. 9th, 5 millions (5 m.); Nov. 15th, 10 m.; Nov. 20th, 40 m.; Nov. 27th, 80 m.; Dec. 2nd, 100 m.; Dec. 15th, 200 m.; Dec. 21st, 400 m.

Two days after the first dose the nose became decidedly clearer and the membrane less obvious. Two days after the second dose the otorrhœa was much diminished, while the nose continued to clear. Three days after the third dose the otorrhœa ceased, and though a few diphtheria bacilli were still present in the nasal swab the nose seemed quite clean. The nose continued positive throughout, though to a slight degree, up to and after the final dose. On Dec. 12th, at which time the boy had had no dose for ten days, he had a febrile attack with right earache, followed rapidly by profuse right otorrhœa, then by left otorrhœa. No membrane could be seen in the nose. Diphtheria bacilli in small numbers were present in the nose and in the discharge from each ear. This nasal discharge and otorrhœa seemed quite unaffected by a final large dose of 400 millions.

It should be mentioned that it was found impracticable to continue the vaccine treatment after Dec. 21st, at which time each case had received a dose of 400 millions.

The last case is of interest in showing that though the membrane and the original rhinorrhœa and otorrhœa cleared up rapidly under vaccine treatment, nevertheless the nose remained positive. But whereas the swabs before treatment gave almost pure cultures, after treatment the diphtheria bacilli were scanty, requiring for their detection careful search through several fields of a microscope. It seemed probable that the second attack of rhinorrhœa and otorrhœa was due to some other organism, and that the diphtheria bacilli found were merely casual guests rather than the cause of the condition. Since the nasal mucous membrane is apt to be unhealthy and liable to recurrent infection in membranous rhinitis, a combination of diphtheritic with autogenous staphylococcal or streptococcal vaccine from the nose might be of value towards the end of the course in preventing relapse. This would, at any rate, seem a reasonable procedure if Meyer[6] is correct in believing membranous rhinitis to be grafted on to a previous staphylococcal or streptococcal infection of the nose.

One other point needs mention. The disappearance of membrane following treatment by vaccine might conceivably be due only to the natural tendency of the disease to recovery. But the definite diminution in secretion, after one dose in one case, and after two doses in the other two, seems to indicate that the vaccine was a real factor in the improvement. One case also (F) had had one month's previous treatment without any change, and the improvement followed shortly after vaccine treatment was begun.

General Conclusions.

The facts indicated above seem to warrant the following conclusions:—

1. Membranous rhinitis can readily produce similar disease in others.

2. The connexion between membranous rhinitis and diphtheria in the school outbreak detailed above was so intimate as to make it almost certain that there was a causal relation between them.

3. It is a point of practical importance that the comparatively frequent occurrence and great infectivity of membranous rhinitis should be recognised widely. Missed cases of the disease would readily account for a not inconsiderable proportion of school diphtheria.

4. An autogenous vaccine seems to be of definite value in removing membrane, getting rid of nasal discharge, and hence greatly reducing the infectivity of membranous rhinitis. But the vaccine does not appear to be capable of completing the work of elimination after the membrane has gone—i.e., after the vascular and lymphatic channels by which antibodies can reach the bacilli have been removed.

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SCHOOL CLOSURE IN MEASLES.

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To those working on the preventive side of medicine school closure as a means of controlling epidemics is always an interesting question. Opinions differ as to its efficacy even amongst medical men, and the present article is an account of how it worked in an epidemic of measles. Laymen, especially members of education committees, often meet our arguments in favour of school closure with the retort that the children are just as liable to be infected in their home life as they are to be infected in school. The

intercourse in the home, the street, the Sunday school, and places of amusement plays, of course, its part in the spread of infectious disease, but I hope to show that in the epidemic which is here considered it was a minor part.

During the spring and early summer of last year we had to control an extensive epidemic of measles, which affected 15 out of 21 of our infant schools. There were 858 children attacked, and each of the cases has been investigated for the purpose of a special report to be included in the annual report for 1911. I have analysed the figures of incidence in each school in the hope that other school medical officers will follow my example and give the profession figures of proof of the efficacy of school closure. The accompanying table shows the departments affected, the

Table showing the Influence of School Closure in an Epidemic of Measles.

Name of school.	Extent of closure.	Average attendance.	No. of susceptible children.	No. of cases before closure.	No. of cases within 14 days after.	No. of cases more than 14 days after.
Westoe	All.	480	240	77	27	17
Ocean Road ...	,,	380	190	51	16	7
St. Hilda's ...	,,	170	80	19	1	2
St. Stephen's ...	,,	175	80	18	0	5
Gilbert Street	,,	400	200	71	28	20
Barnes	,,	440	210	37	8	0
Baring Street...	,,	450	220	49	16	1
Mortimer Road	,,	520	250	76	18	3
W. Harton ...	,,	200	100	28	6	1
Cone Street ...	,,	310	150	22	1	8
H. Trinity ...	,,	345	170	51	10	6
Laygate Lane...	Classes 5, 7, and 8.	150	70	21	0	2
St. Bede's... ...	Classes 6 and 7.	100	40	28	1	2
Stanhope Road	Class N 2.	50	20	22	0	0
Mowbray	Classes 7, 8, 9, 9A, and 10.	300	160	48	8	1
Total... ...	—	4470	2180	618	140	75

extent to which they were closed, the rough average attendance of the department, the number of children who had not already had measles (from figures obtained during three years of medical inspection), the number of cases occurring before closure, the number occurring within 14 days of closure, and the number which occurred more than 14 days after the closure.

We must take into account, as I have already said, both the infection which may be present in the home life and that in the school life. If we eliminate one of these sources of infection we can then ascertain the part played by the other in spreading the disease, providing that we have remaining, after one source has ceased to act, a large number of susceptible children. During the period that a child is at school both sources of infection are in operation, and for a period of 14 days after the child is excluded it is still possible that the child was infected at school and has been carrying the undeveloped disease in its system. After the maximum period of incubation has expired all cases occurring amongst the children must be the result of infection in the home life.

There were in this epidemic 4470 children exposed to infection, and of these 2180 were susceptible to measles. Of these, 853 children were attacked, 638 cases occurring during the time that the children were at school and 140 during a period of 14 days after the school was closed; that is, 778 cases which might have been infected either at school or in the home life. Thus, at the time of the removal of the possibility of the infection at school there were still more than 1400 children who were susceptible to measles. Only 75 of these children actually contracted the disease. This shows, I think, the important part played by the school in the spread of the infection of measles and the value of school closure in this epidemic as a preventive measure.

South Shields.

AN OPERATION FOR HÆMORRHOIDS AND CHRONIC CONSTIPATION.

BY CHARLES AUBREY BUCKLIN, M.A., M.D.

THIS operation, which is described below as it has been performed, is designed for the relief of hæmorrhoids and chronic constipation when these are not caused by obstructive inflammatory changes or by neoplasms above in the intestinal tract.

The first instrument necessary is a bi-valve vaginal speculum which can be so forcibly distended with a screw mechanism that the grasping of the distal ends of the blades offers no serious resistance to the distending apparatus. The stem of the screw device of this speculum should be marked with a file so as to indicate when its blades are distended until they measure six inches about their distal ends. The size of six inches in circumference will be found to be a safe and sufficient distension of the sphincters of the anus for all well-developed persons over 15 years of age who are suffering from these diseases. The surfaces of the speculum blades must be smoothly finished and without any openings through them. The instrument should be disinfected and then allowed to become thoroughly cool, after which the blades should be immersed in melted beef or mutton tallow which has been previously heated sufficiently to sterilise it, and then allowed to cool down to the lowest temperature at which it will remain fluid before the blades of the speculum are immersed. The blades are thus covered with a coating of tallow. It has been clinically demonstrated that this method of greasing the blades prevents any accidental complication resulting from abrasions of the mucous membrane which have been caused by stretching the sphincters of the anus so extensively with instruments.

The patient having been prepared for this operation by taking upon retiring on the previous night the necessary cathartic is anæsthetised to the state of muscular relaxation. The greased blades of the speculum are instantly introduced just through both sphincters sufficiently to insure that they are stretched when the blades are expanded. Five minutes are taken distending the blades to the proper size. The screw is now reversed one turn which causes the blades to relax from their strong contact with the mucous membrane of the anus sufficiently to allow the speculum to be slowly rotated and manipulated for the purpose of exposing the lining of this opening for inspection. Hard stumps resulting from previous hæmorrhoids are removed with the forceps and a knife. Other forms of this disease are treated with the forceps and a No. 1 catgut ligature, after which the hæmorrhoids are cut off outside of the ligatures; or when the swellings are too numerous they may be treated with hypodermic injections of 30 per cent. of carbolic acid in alcohol. The slits made in the mucous membrane by operating are better closed by stitches of No. 1 catgut for the purpose of avoiding complications.

No further explanation of the methods of operating is necessary. The patient should be confined in bed for five days after the operation. A bandage has not been found necessary in cases that have been operated. The bowels should be locked up by giving a dose of one grain of opium morning and evening. The giving of opium should be commenced as soon as the patient is able to take the medicine after the operation. On the evening of the fifth day the opium should be discontinued and the patient should take a similar dose of the same cathartic medicine as was used at the commencement of this treatment. On the sixth day the patient can be discharged entirely free from any danger of the hæmorrhoids returning. When the trouble is chronic constipation it will rapidly disappear.

These results are attributable to the reduced action produced in the sphincters by their extensive stretching. The contractions are permanently reduced and the spasms with which the sphincters were constantly affected in both of these diseases are removed. Without having had clinical experience of these results no one can appreciate the physiological relief which attends stretching of contracted sphincters in diseases of this class.

New York.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY INTRAVENOUS INJECTION OF CHINOSOL WITH FORMALDEHYDE.

BY JOHN MCELROY, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.

IN THE LANCET of Nov. 12th, 1910, I published the effects of the above treatment in three cases of pulmonary tuberculosis. Since then I have had 22 cases under my care, and I think the publication of my results may prove interesting. It is quite possible that these results would have been even more successful had my patients continued to follow out my directions, but so-called "friendly advice" in several instances intervened and prevented my doing as much for them as I could have done.

Regarding the three cases already published, Case 1 is still at his daily work and feeling as well as ever he did. Case 2 decided to try a sanatorium, and I lost trace of him, although in an indirect way I hear he has not made any more progress. Case 3 took a relapse and put himself under other medical care. Of the cases unpublished:—

CASE 4.—Male, aged 44. Both lungs affected; all right lung and upper left lobe. Abundant coarse moist râles over upper right lobe front and back with fine râles over all affected region. Temperature; sweats; profuse expectoration laden with tubercle bacilli. Pretty severe hæmoptysis on several occasions. Pleurisy. Loss in weight over a stone. Regular medical attendant's prognosis, "hopeless." Present condition: Adventitious sounds absent. Appetite good. Sweats absent; temperature normal. Cough and expectoration practically absent. Gain in weight 17¾ lb. Back at his own work for over three months.

CASE 5.—Female, aged 26. Had been in sanatorium for six months; no benefit derived. Upper and middle lobes of right and upper portion of upper left lobe affected. Dry râles over all affected region. Cough; sputum; tubercle bacilli present. Good deal of weakness with shortness of breath. Not much loss of weight. Present condition: complete absence of adventitious sounds; quite strong again. Gain in weight 6¾ lb. Sputum negative. Back to work.

CASE 6.—Male, aged 26. Ill two years. Hæmoptysis very often. Temperature; sweats; much shortness of breath; sputum positive. No appetite. Very weak. Upper and middle lobes of right lung affected. Dry râles. Slight loss in weight. Present condition: Temperature normal; sweats and hæmoptysis stopped. Appetite good. Breathing much better; feeling stronger. Adventitious sounds gone. Cough and expectoration almost absent. Doing light work.

CASE 7.—Female, aged 16. Ill for a year. Upper lobes right and left affected. Temperature; cough; expectoration; sputum positive. Never menstruated. Slight loss in weight. Regular medical attendant's prognosis, "hopeless." Present condition: Temperature normal; cough and expectoration absent. Last four months menstruated regularly. Gain in weight 6 lb. Adventitious sounds all absent. Back to usual occupation.

CASE 8.—Male, aged 36. Upper and middle right and upper left lobe affected. Temperature; sweats; hæmoptysis; shortness of breath; weak. Loss in weight. Cough and profuse expectoration; sputum positive. Regular medical attendant's prognosis, "hopeless." Present condition: Temperature normal; sweats stopped; no hæmoptysis. Breathing normal; weight normal. Cough and expectoration practically absent. Adventitious sounds disappeared. Able for work.

These cases all seem as if the disease has been arrested and point to the great benefit—to some patients—of the treatment. Of my 17 other cases 5 are improving, but it is too early yet to say how long this will continue as they are still under treatment. With regard to phthisis, seemingly more than to any other disease, any new treatment is criticised from the standpoint of a specific, but can we really say that there is a specific for any disease? I do not think so. Naturally one agrees we have heard of many cures for pulmonary tuberculosis, but they have been, in the majority of cases, unable to stand the test of time. If pulmonary tuberculosis is due to a specific microbe, why does the one treatment not have the same effect on all? This question opens up the query, Is tuberculosis due to a particular microbe? For a considerable period I have held to the opinion that while tuberculosis may be due to a particular micro-organism, yet there must of necessity be different species or varieties of such, else why do we get patients in whom the lung lesion is comparatively small having a most disproportionate systemic infection, resulting in a condition upon which no treatment seems to have any effect, and other cases in which the lung lesion is large, with a small systemic infection and most amenable to treatment? They cannot all be explained by the principle of mixed infection. No; the probability is that when our bacteriological knowledge is improved we shall find there are, as I have already said, various species of the tubercle bacillus, some of the species being more virulent than others. I am pleased to see from one of the journals that Mr. J. Penn Milton is working at a similar theory on practical lines, and I await with interest the publication of his results in this direction.

To enable whichever treatment we select to do the most good for the patient early diagnosis of the disease is of the utmost importance, and the leading specialists in tuberculosis will, I am sure, agree that "the good old clinic with its minute auscultation is the best means to make a good diagnosis." Tuberculin tests are of the greatest service in assisting a decision in a doubtful case, but X ray photography is of practically no value for that purpose, as consolidation of tissue must have taken place before it will reveal anything.

Belfast.

NOTE ON AN OPERATION FOR PHLEBITIS WITH THROMBOSIS.

BY SKENE KEITH, M.B. EDIN., F.R.C.S. EDIN.

Dr. George E. Keith asked me to see one of his midwifery nurses who was laid up by thrombosis with phlebitis in the superficial veins of the right leg, and it had occurred to him that it might be a good plan to cut out the clots and the inflamed parts of the veins. The history of the illness was that the patient (about 50 years of age) had a recent attack of influenza, sufficiently severe to keep her in bed. Ten days after the onset of the illness she complained of pain in the leg, and on examination Dr. Keith felt two large clots—one in the vein above the knee and the other in front of the middle of the leg. The skin was red and swollen, but when I saw her, a week after the clots had been first discovered, the redness had lessened somewhat. The clots were nearly an inch each in length and there was a third small one near the ankle. The veins of the leg were slightly varicose, and there was a very small amount of œdema.

I have not noticed if veins have been removed in this condition, and the operation does not appear to be mentioned in the latest surgical works, but it seemed to me a most reasonable suggestion as it was important that the nurse should not be laid up in bed for an indefinite number of weeks, and the risk of removing a few inches of vein is certainly not greater than allowing a clot to absorb with the accompanying risk of separation. The only point which is doubtful to me is whether the saphenous vein should be tied first. In a markedly varicose condition of the veins I would certainly do so, but in an ordinary case it hardly seems necessary, provided that the vein is exposed and tied well above the clot.

In the case referred to there was no difficulty in the operation, and the veins were much thickened where the clots were situated. Immediately on the proximal side of the clots the veins were normal, thickening towards the distal end and continuing in this state for some distance beyond. As very slight pressure caused the clot to slip out of the vein, it showed how carefully such conditions must be handled. The patient was able to walk ten days after the operation.

This operation seems to be such a useful one that, even if the idea is not original, it is well worth drawing attention to it.

Upper Berkeley-street, W.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Hereditary Ophthalmoplegia in Five Generations.—Crystal-like Bodies of Radiate Structure in the Lens.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Jan. 25th, Mr. J. B. LAWFORD, the President, being in the chair. It was announced that the society had accepted the invitation of the Dublin members to hold the May meeting on the 11th of that month in Dublin.

Mr. A. A. BRADBURNE read a paper entitled "Hereditary Ophthalmoplegia in Five Generations." In this family there was a condition of ptosis accompanied by an almost complete loss of the ocular movements, which had been present in five generations. After enumerating the numbers affected and briefly describing the condition in each, he proceeded to consider the various types of this rare affection. He classed anomalies of congenital ocular immobility into three divisions: first and most common, those in which only ptosis was present; secondly, when this was combined with epicanthus; and thirdly, a type in which ptosis might or might not be present, but in which the ocular movements were very defective or altogether wanting. This latter type embraced three sub-divisions: (*a*) ptosis associated with defect of the superior rectus; (*b*) more extensive involvement of the eye muscles with or without ptosis, the condition being due to some nerve lesion; and (*c*) this type included the same kind of anomalies, but the condition was due to entire absence of, or very defective development of, the muscles. His own case came under this category. Mr. Bradburne pointed out that in two of the younger members a certain return of the movements had occurred, and suggested how this might have come about. He showed that in the shark the ocular muscles arose from three centres—one for the superior obliques, one for the abductors, and the remaining four muscles arose in pairs from a third. These paired muscles were the superior with the internal rectus and the inferior rectus with the inferior oblique. In all the members of this family the superior obliques were probably present, and hence if any further movements became possible one would expect their appearance to follow somewhat the lines as seen in the shark. In one of the members of the family it had done so, as one eye was able to move from a point straight in front outwards, thus seemingly pointing to a development of the second centre. But that did not follow in another case in which both eyes possessed full lateral motion. By analogy one would expect to find development of motion in the upward direction, but such was not present. Hence the human development was from a different centre to that of the shark, or another factor was present in the case. As the patient had ptosis, motion in an upward direction would not be of much practical use, hence it seemed as if the visual act had had something to do with the "evolution." This seemed probable, as in the same case, to prevent diplopia, the visual act had produced a convergent squint. Finally, he asked if the argument could be logically reversed and the condition of muscle palsy attributed to a long-continued non-use of the eyes in some ancestor afflicted with ptosis.—The paper was discussed by Mr. N. BISHOP HARMAN, who pointed out that in the sunfish each of the recti, except the rectus externus, sent off a separate slip which went to the circular fold round the eye, and was capable of retracting a fold from the cornea, and one saw the original development of the levator. The idea of an arrest of development running through a family was easier of acceptance than the more difficult theory which Mr. Bradburne had brought forward.—Mr. W. M. BEAUMONT (Bath) suggested the condition might not be so much a pathological one as a tendency in this family to a throw-back to a primeval condition antecedent to the development of the oculo-motor muscles.

Mr. GEORGE COATS read a paper entitled "On Crystal-like Bodies of Radiate Structure in the Lens." He said they were found in a hypermature cataract in a woman, aged 69, and had not been seen clinically. In the lens nucleus, which had undergone but little degeneration, round and oval bodies, measuring from 0·035 to 0·160 mm., were found. They had a refractile crystalloid appearance and were marked by numerous fine lines converging towards an axial linear streak or spot. There was frequently a tendency to cleavage along these lines, so that the body was split up into a number of radially disposed pyramidal sectors, not unlike the pyramids of the kidney. In the larger crystals there was a central tuberculated mass of mineral hardness, the structure resembling that of a rubber-cored golf ball. Usually the adjacent lens fibres were arranged round the crystals to form a kind of capsule. Only two similar observations were on record, in one of which the bodies were seen clinically as globular beads with a silky or pearly sheen. In all these cases the lens was cataractous; in two the opacity was senile, in one lamellar, the patient being a child of 6. In all the crystals were confined to the more central layers of the lens. As to the nature of the crystals, the scarcity of material made it impossible to carry out extensive histo-chemical researches, but they showed considerable structural resemblance to leucin, a diagnosis which was sufficiently probable, since the crystals occurred in cataractous lenses, and leucin is a product of proteid disintegration. They occurred, however, in the least degenerate part of the lens. Hydrochloric acid produced no effervescence. Dr. W. H. Willcox had kindly examined the specimens, and reported that the appearance of the bodies was "similar to that which leucin takes when it has been subjected to dehydrating processes."—The PRESIDENT asked whether Mr. Coats found these bodies in the extracted lens—i.e., whether the eye had been removed.—Dr. J. BURDON-COOPER (Bath) asked if Mr. Coats had ever found tyrosin in the lens. He had himself discovered that substance in the aqueous after needling for lamellar cataract. Professor W. D. Halliburton, of King's College, confirmed that it was tyrosin. In wondering how tyrosin could have got there, it occurred to him (the speaker) that possibly it was the result of hydrolysis of the lens, and he therefore sent for a pig's eye at the butcher's, and found the lens yielded almost pure tyrosin. The microscope gave the most delicate test for it. Tyrosin was fairly soluble in sulphuric acid. He had found the substance in the lens in all cases of cataract, and he was strongly of opinion that the change which took place in senile cataract was a hydrolysis of the lens.—Mr. COATS, in reply, said there was nothing in his sections which resembled tyrosin.

The following cases and card specimens were shown:—

Mr. A. C. ROPER: Melanotic Sarcoma of the Conjunctiva with Secondary Nodules in the Skin. There was no trace of anything in the fundus. He was advised radically to remove the whole of the orbital contents. The skin nodules were found not to be malignant.

Mr. COATS: (1) Concretions (Drusen) of the Papilla; and (2) Corpora Amylacea in the Retina.—Dr. E. FARQUHAR BUZZARD said the appearance was different from corpora amylacea in nerve tissue generally, as in this case there was a definite capsule.

Dr. RAYNER D. BATTEN: A Fixation Fork, designed for the insertion of sutures in the sclerotic in advancement operations. By its aid one could pick up exactly the amount required, and there was no danger of the needle being pushed in too deeply. He also showed a case of Central (Macular) Coloboma of the Choroid of unusual form, symmetrical in the two eyes.

Lieutenant-Colonel J. L. PISANI, I.M.S., showed a case, which was originally exhibited in 1880, with peculiar bodies on the iris after needling for lamellar cataract.—Mr. M. S. MAYOU thought the bodies might be due to implantation of the cells of the capsule on the iris.

Mr. R. A. GREEVES: (1) A case of Metastatic Septic Choroido-retinitis; and (2) a case of Quinine Amblyopia.

Mr. COATS: A case of Tubercle of the Choroid in a Cat.—Mr. MAYOU related a case in a cat also, which bore out Mr. Coats's remark. In that case, however, there was a small nodule in the breast. He thought it was not likely for primary tubercle to start in a choroid without there being a lesion elsewhere in the body.

Mr. C. WRAY: (1) A case of Glaucoma; (2) a case of Keratitis Disciformis; and (3) a case of Exostosis of the Roof of the Orbit.

Mr. R. R. JAMES: A case of Hyaline Degeneration of the Disc.

Mr. C. A. HORSFORD: A case of Mal-Development of the Eyes in a child.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.

Hydatidiform Mole.—Heath's New Treatment for Paracutic Deafness.

THE annual meeting of this society was held at the Royal Devon and Exeter Hospital on Jan. 12th, Dr. R. V. SOLLY, the President, being in the chair.

The honorary secretary's report for the past year having been read and adopted, the following officers were elected for 1912:—President, Dr. R. V. Solly; Vice-President, Dr. C. J. Vlieland; honorary secretary, Mr. G. L. Thornton; honorary treasurer, Mr. Ransom Pickard.

Mr. G. L. THORNTON read notes on a case of Hydatidiform Mole. The patient, a married woman, aged 36 years, was first seen by Mr. Thornton in response to an urgent summons on June 28th, 1911. On arrival the patient was found to be lying on a sofa downstairs blanched and collapsed. There was every evidence of severe flooding not yet arrested. A cursory examination showed that the abdomen was enlarged to above the umbilicus with a (?) pregnant uterus. In addition there was massive soft œdema from the waist downwards. The condition being one of extreme gravity, the vagina was at once plugged with strips of gauze wrung out in 1-4000 biniodide of mercury, and ergotinine cit. gr. 1/100 was injected intramuscularly. The patient was then removed in an improvised ambulance to the Exmouth Cottage Hospital. The notes on admission showed nothing of note in the family history, whereas the patient herself had never had cause to consult a medical man previously. She was married at the age of 25 years. There were six children born at full term and all living, and there had been no miscarriages; all deliveries had been easy and natural. Catamenia had begun when the patient was 14 and had been regular as a rule. The bowels acted regularly, and as regards alcohol she was a total abstainer. The last child had been born on Oct. 2nd, 1909. She had nursed until May, 1910. Catamenia had returned again in June, 1910, and remained regular until April, 1911, when she menstruated early in the month. Although occupying the usual period with her of seven days the menses were scanty. About the middle of May there had been a sudden severe flooding, and since then constant oozing with actual flooding on some days and a mere show on others. She had noticed no clots and no material other than blood. During the first week in May (and prior to the first flooding) she felt sick and vomited after food. This sickness was accompanied with frontal headache which had since remained constant. The sight had remained good. About three weeks before admission she first noticed swelling of both feet and shortly afterwards of the legs and thighs. For about a fortnight she had noticed that the abdomen had been increasing in size. She had felt no movements and did not consider that she could be pregnant. There had been no difficulty in micturition and the bowels had remained regular. On June 28th (the day of admission) a severe flooding occurred when she was at work in the kitchen. She became faint and collapsed, in which condition Mr. Thornton shortly found her. "The present condition on admission" noted that she was a very pale woman, well nourished, with slight puffiness of the eyelids. There was dyspnœa, but no thorough examination of the lungs could be made (subsequently œdema of both bases was noted). Save for a low-pitched systolic murmur over the præcordium and a banging first sound, there was nothing to report as regards the heart. The pulse, which was very rapid when first called to her, had steadied down to 80 two hours after the ergot injection. The abdomen was distended from one inch above the umbilicus downwards. Both flanks were resonant. The swelling was of the size of a pregnant uterus at the sixth month, and could be felt to harden on palpation. Occasionally it gave a somewhat doughy impression. Low down on the right there was exquisite tenderness to even superficial palpation. Per vaginam the cervix felt like that of the second or third month. The os externum was patulous to the tip of the index finger. There was no *ballottement*, and the examining finger encountered everywhere the same doughy consistence as that noted per abdomen. A sample of urine was found to be of specific gravity 1016 and to show "solid" albumin on boiling. Plentiful hyaline, granular, and a few epithelial and blood casts were noted in the centrifugalised deposit. Hydatidiform or carneous mole was considered from the first to be the most probable diagnosis, and, indeed, no likely alternative seemed to be forthcoming. It was decided to endeavour to improve the general condition and to avoid operative interference for the present. Biniodide douches were ordered and a mixture containing digitalis, citrate of potash, and liquor ammon. acetatis was given, and the patient was placed on a milk diet. There was no further hæmorrhage during the first week following admission, and the general condition improved as regards lessening of œdema and decrease in albumin. The quantity of urine barely yet, however, exceeded a pint. On July 4th, following on the advice of Mr. A. C. Roper (consulting surgeon to the hospital), who had kindly taken an interest in the case throughout, ergot was added to the mixture and a few pains followed the same night. Labour pains did not, however, set in fully until the early hours of July 6th, when Mr. Thornton was called to her at about 3 A.M. The mole had then been rapidly expelled in three portions with considerable hæmorrhage, but after expression of some clots and a small remaining portion the bleeding was soon arrested and a firm contraction of the uterus was obtained. The condition was an anxious one for about 24 hours, and hypodermics of strychnia were given eight-hourly. The subsequent history was uneventful, œdema and albuminuria both clearing up gradually and the quantity of urine passed increasing to two pints and upwards within three days. The temperature, which had been of an intermittent type from the time of admission, did not reach normal until the first week in August. One sudden rise to 104·8° was noted on July 20th and was difficult to account for. The patient was discharged from hospital on August 15th, and subsequently was observed as an out-patient under Mr. Thornton's care at the Exmouth Dispensary. In September no traces of renal disease could be found, but the uterus had again cropped up above the brim. To exclude possibility of chorionic epithelioma the patient was now sent to the Samaritan Free Hospital, London, under the care of Dr. G. F. Darwall Smith, who curetted and received a favourable report from the pathologist. The woman was at the present time menstruating regularly and in apparent sound health. The points about the case were: (1) The rarity of hydatidiform mole—1 in 2000 deliveries, according to Galabin and Blacker; and (2) the obscure causation. The history of this case suggested the nephritis being consequent upon the establishment of a molar pregnancy, and the same arguments could be advanced for the renal condition as were upheld in cases of puerperal eclampsia. If the placental auto-intoxication theory held good in eclampsia, where most often nothing abnormal could be found, how much more easy would be its explanation in cases of molar pregnancy and the extensive chorionic degeneration concerned with it. The irregular chart again suggested an infection. As regarded treatment, there was nothing to regret, and the only comment to make was the immediate response to ergot both as regards the initial hæmorrhage and the subsequent emptying of the womb. A careful subsequent examination by a skilled gynæcologist was suggested in a condition which, according to the text-books, is followed by chorion epithelioma in 60 per cent. of the recorded cases.—The PRESIDENT spoke of an allied condition to chorion epithelioma occurring in the testicle of a man. In his opinion he did not think that vesicular mole was as rare a disease as the text-books made it. He had come across three in his own experience.—Dr. J. D. HARRIS mentioned a case where a part only of the placenta was involved.—Mr. C. E. BELL supported the contention in the matter of rarity, and he did not agree in the figures given for the incidence of chorion epithelioma.—Mr. THORNTON replied.

Mr. ROBERT A. WORTHINGTON read a paper entitled "A Note on Mr Heath's New Treatment for Paracutic Deafness." He briefly described the chief theories as to the cause of paracusis Willisii, and contrasted that of Heath with that of Politzer and with Gray's more philosophical development of Politzer's theory. He said that Mr. Heath appeared to consider the essential causes of paracutic deafness to be a loosened ossicular chain and a lowered tension in the labyrinthine fluid content, the latter being dependent on the imperfect action of the stapedius muscle induced by the former. He pointed out that the early onset of

paracusis in otosclerosis, a disease of definitely observed morbid anatomy, appeared to render the hypothesis of a loosened ossicular chain untenable. With regard to the tension of the labyrinthine fluids, the continuity of the latter with the cerebro-spinal fluid appeared to render it unlikely that any change in tension could be of more than momentary duration. On anatomical grounds, too, it seemed probable that the action of the stapedius was such as to tilt the stapes away from the oval window, which would tend to lower rather than raise labyrinthine tension. If the labyrinthine tension could be raised for an appreciable time by the movements of the stapes, then it would be by such an experiment as Cyelle's, and in this, as is well known, the perception of sound is diminished, not increased. Although he disagreed with Mr. Heath's theories the complexity of the subject was such that he felt that the treatment Mr. Heath had advocated might turn out to be of value on quite other theoretical grounds. He then described in detail two cases of paracusis with thin flaccid tympanic membranes which he had treated by painting with cantharidin solutions according to Mr. Heath's method. During the treatment the patients became very deaf indeed in the ear to which it was applied; at the same time, however, the tinnitus which had been a marked symptom disappeared. As the inflammatory processes were allowed to subside the hearing gradually returned, as far as the ordinary tests went, to exactly what it had been before. Both patients considered, however, that they heard better, and having lost their tinnitus were at first very pleased. Unfortunately, the tinnitus all returned again within a few weeks of ceasing treatment. Mr. Worthington was further of the opinion that the improvement in hearing was more imaginary than real, and due to the contrast with the high degree of deafness during treatment.—The PRESIDENT and Dr. HARRIS discussed the paper and Mr. WORTHINGTON replied.

Mr. G. A. THORNTON exhibited blood film stained to show crescents from a case of Malaria under his care.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Cæsarean Section.—Retroversion of the Uterus.

A MEETING of this society was held on Jan. 19th, Dr. A. DONALD (Manchester), Vice-President, being in the chair. Dr. Arnold W. W. Lea (Manchester) was elected President for the ensuing year.

Dr. A. STOOKES (Liverpool) related the details of two cases of Cæsarean Section. The first case was that of a woman, aged 30 years, who had had three normal labours and who gave no history of trouble in the present pregnancy. The patient was seen at 5 A.M. by two medical men, who found her with strong labour pains and the vagina blocked by a tumour, so they sent her to the maternity hospital. On admission it was found that an arm was presenting and that the vagina was blocked by a soft fibrous mass which passed within the cervix; no pedicle could be reached. The general condition of the patient was fairly good; she was pale and the pulse-rate was about 100. The abdomen was larger than usual, but not tender. Cæsarean section was done and a dead child was extracted weighing 6 lb. 6 oz. After removing the placenta and membranes the tumour was found to have an extensive attachment to the posterior wall of the uterus, so supravaginal hysterectomy was done. The patient died from shock eight hours later. In the second case the patient, who was 42 years of age, had had eight normal labours. She was vomiting incessantly and was constipated; the bowels had moved slightly two days previously. The abdomen was not enlarged more than a full-time pregnancy and there was no hyper-resonance. Operation was decided upon as it was thought that there must be intestinal obstruction. After a dead child weighing over 7 lb. had been removed the peritoneum was found to be salmon pink in colour and studded with small yellow spots. The whole of the small intestine was empty and collapsed. The large intestine was attached by a mesentery 7 in. in length, which allowed the caput cæcum to fall into the pelvis. It was thought by Dr. Stookes that this must have caused incomplete obstruction, and that the empty state of the bowels was due to the reversed peristalsis, but he now believed the explanation offered by Mr. A. N. Cuff to be the probable one—that the woman was suffering from acute pancreatitis. The patient recovered from the anæsthetic and said she was much relieved, but she died next day from exhaustion.

Miss M. H. F. IVENS (Liverpool) read a paper analysing 100 Consecutive Cases of Retroversion of the Uterus, treated by round ligament ventro-suspension (Gilliam's operation), in which the after-history had been ascertained in 93 cases. There had been no mortality; 93 had healed by primary union, and in one case only had relapse occurred owing to the tenuity of the ligaments. In 32 uncomplicated cases the results were most satisfactory, while in 11 associated with marked prolapse the uterus was held up well by the round ligaments, which showed extreme hypertrophy after operation. In 46 cases where adnexal disease was present good results were obtained in all but the gonorrhœal cases, where further inflammatory trouble took place in 11 instances, although the uterus maintained its position. In 3 cases out of 4 with uterine fibroids myomectomy, followed by Gilliam's operation, was successful; the fourth subsequently required hysterectomy for a submucous sessile tumour. In 20 instances pregnancy had since occurred. Of these, 11 had borne children with no difficulty, 6 were still pregnant, and 3 had had abortions. As no ill after-effects were present in the 93 cases followed up it was concluded that the operation was a safe and successful one when done under suitable conditions, and could be undertaken during the child-bearing period. From a careful consideration of the history and symptoms of the cases recorded it was also concluded that in the majority of instances even a simple retroversion of the uterus ultimately caused pathological changes in the pelvic organs, beginning with passive venous congestion, and that for this and other reasons therefore required treatment.

LIVERPOOL MEDICAL INSTITUTION.

Recurrence of Adenoids.—Tuning-fork Vibration and Auscultation.—Opening of Skull in Cases resembling those of Tumour of the Brain.

A MEETING of this society was held on Jan. 25th, Mr. ROBERT JONES, the President, being in the chair.

Mr. THOMAS GUTHRIE read a note on the Recurrence of Adenoids, in which he pointed out that recurrence was seen most commonly in children operated on under the age of four years, even when the operation had been as complete as possible. Recurrence was not frequent in those between four and seven years of age, and practically did not occur in patients over seven where the operation had been thorough. Mr. Guthrie showed a photograph of the naso-pharyngeal tonsil removed from a child of three and of the growth which recurred at the age of five. He pointed out that recurrence was favoured by attacks of the specific fevers, by congenital syphilis, and by anterior nasal obstruction from bony deformities, &c. He urged after-treatment of posterior nasal catarrh and attention to the general health conditions of the patients.

Dr. R. J. M. BUCHANAN read a note on, and demonstrated the method of, Tuning-fork Vibration and Auscultation. He used a fork of "A" pitch, which was struck, and the stem placed on the part to be examined; the stethoscope was applied, and the fork moved by small steps over the part. The sound vibrations varied with the nature of the part over which the fork was resting. Dr. Buchanan claimed for this method that it was possible to map out organs accurately, to differentiate solid from liquid, the colon from small intestine, the stomach from the colon. He could map out portions of consolidated lung and mediastinal tumour. In one case he had been able to make out alteration in the size of a kidney which had been verified by separation of urine and by the findings at the operation.

Dr. W. B. WARRINGTON read a paper on the Results of 17 cases in which the Skull had been Opened for Symptoms resembling those of Tumour of the Brain. The operations had been mainly done by Mr. Keith Monsarrat. Of 9 cases of cerebellar exploration death took place soon after operation in 5; in these the diagnosis was confirmed by post-mortem examination and in 2 by the findings at operation. In 4 cases the patients recovered; 3 were alive and well with

the vision preserved; 1 went blind (in this patient nothing was found at the operation though bilateral exploration was made). In 2 of these successful cases nothing was seen at the operation; in 1 a tumour was diagnosed and found on the left side of the cerebellum. Of 8 cases of cerebral exploration 4 were fatal within a month. In 1 a tumour in the right parietal region was partly removed with relief of agonising pain, the patient living a year. In 3 cases where no gross lesion was found at the operation relief was obtained from the symptoms: 1 patient alive and well with improved vision five years after operation, another three years after operation, and 1 died a year after with right hemiplegia. Dr. Warrington had found that advanced cases did not improve in vision and in the condition of the discs, but where the operation was done in the earlier stages of the alterations improvement was to be looked for as the result of a decompression operation.

Considerable discussion took place, in which Mr. THELWALL THOMAS, Mr. DAMER HARRISSON, Mr. E. STEVENSON, Mr. H. E. JONES, Dr. N. P. MARSH, Dr. J. H. ABRAM, Mr. R. M. STOCKDALE, Mr. R. W. MURRAY, Mr. C. G. LEE, and Dr. H. R. HURTER took part.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 19th, Dr. A. Freeland Fergus, the President, being in the chair.—Mr. A. Ernest Maylard showed a boy, aged 10 years, who had been admitted to the Victoria Infirmary in September last suffering from an extensive Compound Comminuted Fracture of the Cranial Vault in the right parietal region, with escape of brain tissue, and signs of fracture of the base of the skull. At the operation the extruded brain matter and depressed fragments of bone were removed and other portions of bone elevated. The wounds remained aseptic throughout, but the boy was delirious for some days, and for a fortnight was not expected to survive. Thereafter he made a good recovery, and when shown, about three months after the accident, was mentally acute and physically active.—Dr. R. Speirs Fullarton showed a boy, aged 9½ years, who during the past three years had had three attacks of Hæmaturia, and now had a large tumour in the region of the right kidney, which was said to have been noticed first about three months ago. The diagnosis was thought to lie between cystic kidney, malignant tumour of the kidney, and hypernephroma.—Dr. Fullarton also gave a short account of the albumin-reaction of the sputum in pulmonary tuberculosis, and said that his observations made in 50 cases of phthisis and 50 cases of chronic bronchitis and other non-tubercular pulmonary affections confirmed the statements of continental observers that in the great majority of cases of phthisis and in pneumonia during the acute stage albumin is present in the sputum in considerable amount; while in the majority of cases of non-tubercular conditions (excepting pneumonia) albumin is either absent or is present in trifling amount. The proportion of cases in which this rule did not apply was, however, sufficiently large (as had been shown by Dr. Nathan Raw and as the speaker had found) to diminish seriously its value in the differential diagnosis between tubercular and non-tubercular diseases of the respiratory organs.—Dr. J. H. Nicoll showed: (1) Three examples of Meckel's Diverticulum which had been removed in consequence of having caused intestinal obstruction; (2) a large Mesenteric Fibro-sarcoma, with three-fourths of the small intestine necessarily removed with it; (3) Masses of Lymphatic Vessels excised in a case of Filarial Lymphangiectasis of the Spermatic Cord; (4) Calculi of Unique Composition removed from the Bladder in a case of Prostatic Hæmaturia; and (5) a large number of specimens from recent cases in which "piecemeal" prostatectomy had been performed. Dr. Nicoll strongly recommended the piecemeal method of removing the prostate, of which, he said, surgical opinion was increasingly in favour.—Dr. G. H. Edington showed a specimen of an Old Fracture-dislocation of the Upper End of the Humerus, and photographs of a case of Old Fracture of the Patella, with wide separation of the fragments.

UNIVERSITY COLLEGE, DUBLIN (NATIONAL UNIVERSITY OF IRELAND), MEDICAL SOCIETY.—A meeting of this society was held at the Medical School, Cecilia-street, on Jan. 25th, Dr. John O'Donnell being in the chair.—Mr. Maurice R. J. Hayes read a paper on the X Ray Diagnosis of Diseases of the Chest. After demonstrating by means of lantern slides of skiagrams the x ray appearances of the normal chest, he went on to describe the appearances in early phthisis, pleurisy, aneurysms, tumours, diseases and foreign bodies in the œsophagus, &c. He held that phthisis could be recognised by the fluorescent screen even before physical signs could be detected. In these cases the apices were seen to go through the stages of brightness, transradiancy, blurring, and deep shadow, while the diaphragm could be seen to lose its normal regular variation and to become jerky or "cog-wheel" on the affected side. He also emphasised the importance of the left oblique position—viz., tube to the left behind and screen to the right in front—in diagnosis of aneurysms of the arch of the aorta.—Mr. T. T. O'Farrell showed specimens of Mediastinal Tumour, Aneurysms, and Fish-bone Perforation of the Intestine.—A discussion followed, and was partaken in by Mr. M F. O'Hea, Mr. G. Maguire, Mr. O'Farrell, Mr. H. S. Meade, Dr. W. D. O'Kelly, and Dr. H. L. Barniville.

Reviews and Notices of Books.

Breeding and the Mendelian Discovery. By A. D. DARBISHIRE, M.A., Demonstrator of Zoology and Lecturer on Genetics at the University of Edinburgh. London: Cassell and Co., Limited. Illustrated. 1911. Pp. 282. Price 7*s.* 6*d.* net.

HOWEVER different opinions may be upon the interpretation and general bearings of the facts dealt with in this book the author must certainly be credited with having set forth an admirably clear statement of his subject-matter. Mr. Darbishire's style is of a high order, always lucid, and never prolix. It is not too much to say that this work, although "intended to serve merely as an introduction to the subject," seems to be the best exposition of "Mendelism," from the Mendelian point of view, that has as yet appeared; it is free from any tone of sectarian fervour, and makes no exclusive claim of infallibility for hypotheses which happen to be founded on experiment. Experiment is a mode of making observations, and explanations founded on data thus furnished are as liable to error as those founded on any other verifiable facts. These qualities of clear statement and temperate advocacy should strongly commend this book to the notice of all students desirous of informing themselves of the basic facts on which the Mendelian hypothesis has been raised. Hence this work has a definite value quite apart from the specific object aimed at by the author.

Mr. Darbishire states at the very outset that his object is "to place within reach of the practical breeder some of the things found out by the scientific student of heredity which are likely to be of service to him." Bearing this in mind we cannot perhaps quarrel with the author for the scanty and scarcely critical treatment which he gives to certain important considerations connected with or underlying his main subject. These considerations, however, he apparently admits to be important. After the preliminary statement of his object, as above quoted, he proceeds to say that the breeder has two methods, "selection" and "crossing," and that selection creates something new, while crossing merely re-combines characters which already exist. Very little or nothing is known (he says) "of the causes which determine the origin of new characters, either in the domesticated or natural state; but the art of breeding by re-combination of existing characters has been brought to a point of extreme precision by Mendel's discovery." This statement concerning "recombination" seems somewhat magisterial as it stands; the defined scope of the book, however, may be held to account for this assumption.

Again, after repeating that his object is to "make

perfectly clear what the Mendelian discovery was, and how it affects the practice of breeding," the author announces that he "will deal with the origin of new forms, because a knowledge of Professor De Vries's observations on this process is necessary to an appreciation of the significance of Mendel's discovery." On this follows at once an excellently clear statement of the hypothesis of *Mutationism*, which is so intimately associated with Mendelism in many, if not most, Mendelian writings. But here Mr. Darbishire, by omitting all critical comment on this new hypothesis of the origin of species, will leave many readers in some doubt as to how much importance he attributes to it himself, and how far it is bound up in his own mind with the Mendelian theory to the application of which he devotes the rest of his book. Again, in dealing with the matter of "Reversion," the author gives several instances and writes with his usual clearness; but other aspects of the questions involved are not discussed: he states that he has been merely concerned to point out that certain cases of "reversion" can be easily described in terms of Mendelian hereditary processes. In another place he says that though the Mendelian theory of "reversion" is not proved, it is, in his opinion, the first consistent theory which has been set forth. Here Mr. Darbishire certainly avoids any charge of dogmatic statement, but nevertheless the underlying assumption is of high importance to his general position.

After two interesting and ably written chapters (XV. and XVI.) on New Principles of Breeding, based on Mendel's Theory and on the Inheritance of Sex, the book ends with a very short chapter on the Origin of the Mendelian Mode of Inheritance. This chapter, consisting of but seven pages, begins with the statement that "it is a very important matter to determine whether Mendelian heredity is a fundamental process the true understanding of which will render all other phases of heredity intelligible, or whether it is an anomalous phase of heredity which is restricted to a small group of characters belonging chiefly to domesticated animals and plants. For if the latter is the case the investigation of Mendelian phenomena can throw no light on the problem of the successive generations of organisms, nor help to elucidate the nature of the processes to which evolution is due." Here Mr. Darbishire, in support of what apparently is his own view on this all-important question, singles out one opponent, Dr. Archdall Reid, and attacks him without great effect. Quite apart from the fact that the question to be decided does not turn necessarily on any views which may or may not be proper to Dr. Reid alone as to the question of sex-inheritance, and also apart from the fact that large numbers of biologists do not consider that Mendelism with all that it seems to entail is the true key to the process of biological evolution, it appears to us that Mr. Darbishire really fails to understand what Dr. Reid himself means. This may be to some extent Dr. Reid's fault. Mr. Darbishire is misled by words to oppose the "massive" as applied by Dr. Reid to evidence gathered from all available and relevant sources, to the "minute" evidence relied upon by himself in the matter of the observation of chromosomes, thus using a false antithesis. And we do not see that he is justified in attributing to Dr. Reid the belief that the *a priori* method of reasoning is trustworthy. But Mr. Darbishire does not expand this statement, and what he conceives the *a priori* method to be remains very doubtful.

In this interesting book the author is unquestionably at his very best when he deals, as in far the larger part he does deal, with the object he professedly undertook. But when touching, as he evidently thought it necessary to touch, on the wider biological questions concerning the origin of new forms, his judicial attitude seems to fail, and he appears to imply that the important question he raises as to the fundamental part played in heredity by the Mendelian process is already answered in the affirmative.

The excellent plates, in colour and in black and white which illustrate this book will be highly appreciated by all students.

Archives of Neurology and Psychiatry, from the Pathological Laboratory of the London County Asylums, Claybury, Essex. Edited by F. W. MOTT, M.D. Lond., F.R.S., F.R.C.P. Lond., Director of the Laboratory and Pathologist to the London County Asylums, Physician to Charing Cross Hospital, &c. Volume V. London: P. S. King and Sons. 1911. Pp. 226, exclusive of Appendix of Collected Papers.

VOLUME V. of the "Archives of Neurology and Psychiatry" maintains that high level of scholarship which our experience of its predecessors has led us to anticipate. It bears witness to the health and progressive vigour of neurological and psychiatrical research in the laboratory of the London County Asylums, under the ægis of its able director, Dr. Mott. In this volume 11 papers of varying length are published for the first time, and in an appendix seven others are republished, some of which have already appeared in the pages of THE LANCET. Of the former, reference may be made to the authoritative communication on Congenital Syphilis and Feeble-mindedness, from the pen of Dr. Mott. He shows conclusively that syphilis is an active agent in the production of congenital weakness and the degeneracy that accompanies it, and furnishes evidence to prove that the measure of its influence ought not to be estimated only by the visible and characteristic signs of syphilis on the body. The whole article deserves to be read carefully.

Other valuable papers are those on Institution Dysentery, by Dr. J. P. Candler and Dr. G. Dean, in which the same organisms as have been found in summer diarrhœa are reported as occurring in certain cases of epidemic intestinal dysentery at Claybury; on the Cortex of the Auditory Centre, the Insula, and Broca's Convolution in a Case of Deaf Mutism, by Dr. Fortuyn, of Amsterdam; on the Microscopic Investigation of a case of Tabo-paralysis with Bilateral Ophthalmoplegia, by Dr. Rondoni, of Florence; while the psychiatrical side is worthily represented by papers on the Psychological Conception of Insanity, by Dr. Bernard Hart; on "Washing Hand" Mania, by Dr. G. F. Barham; on Dementia Præcox, by Dr. Harper-Smith and Dr. G. H. Rae Gibson. In the appendix are Dr. Mott's Oliver-Sharpey lectures on the Cerebro-spinal Fluid, his Huxley lecture on the Hereditary Aspects of Nervous and Mental Diseases, and his Royal Institution lecture on Heredity and Insanity, as well as important pathological papers on Trypanosome and Spirochæte Infections, and on Amaurotic Family Idiocy, by the same author, and others that will equally well repay perusal by the neurologist and the physician.

Medical Science of To-day: A Popular Account of the More Recent Developments in Medicine and Surgery. By WILLMOTT H. EVANS, M.D., B.S., B.Sc. Lond., F.R.C.S. Eng., Surgeon to the Royal Free Hospital and Surgeon to the Hospital for Diseases of the Skin, Blackfriars. With 31 illustrations. London: Seeley, Service, and Co., Limited. 1912. Pp. 319. Price 5*s.* net.

"SUCCESS in carrying out the preventive measures which medical science has indicated does not depend only on members of the medical profession. It depends on the Government, on every voter in the Kingdom, and on every individual citizen, for without the coöperation of those who govern and those who are governed medical men can do nothing." In these words Mr. Willmott Evans strikes the keynote of his recent work, "Medical Science of To-day." With this point in view the education of the public in medical principles becomes a matter of the first importance, such

education being not in the details of disease as affecting the individual and their treatment, a practice which the medical profession must continue to deprecate as leading to injurious introspection, but in the broad facts on which our knowledge of disease is based and the methods by which that knowledge is attained, for these only can inspire confidence in the workers and obviate despair over temporarily conflicting views and theories. To this end Mr. Evans's book can be warmly commended for general perusal, the wider the better; to legislators (particularly those concerned especially with public health problems), to those whose function is the instruction of the community, schoolmasters, philanthropists, clerics, writers, and journalists. Mr. Evans says: "If we agree that the mainspring of the opposition to hygienic measures, whether that opposition is intentional or not, is lack of knowledge, it is clearly only reasonable that means should be taken to educate the public mind on some, at least, of the matters which are now engaging the attention of the medical profession, on some of the problems which we are now endeavouring to solve. ..... Though naturally legislators must be, for the most part, dependent on the expert opinions with which they are supplied, yet they would probably be more ready to accept those opinions if they were more able to appreciate the grounds on which those opinions were based." Our readers will here be in accord with the author.

All study of a subject should begin with at least a bird's-eye view of its history, explaining the course of its development, and Mr. Evans gives such a brief, though for the purpose ample, sketch before discussing the causes of disease, which he divides into four classes—mechanical, physical, chemical, and parasitic. Among the parasitic are, of course, included germs, and these are dealt with in a special chapter in an interesting and detailed manner as regards their general characteristics. To the average layman without scientific training few things appear more mysterious and incomprehensible than the estimation of the huge numbers employed in obtaining various scientific data, whether of stellar distances, geological ages, or what not, and there is often a not unnatural tendency to regard them as mere guess-work. The clear and detailed account of the manner in which the enumeration of the corpuscles in the blood is made in Mr. Evans's chapter on the microscope may help to bring conviction to many that not only these but other and very different calculations are really based on sound principles. The uses of the microscope in medicine and the various points concerning which information can be obtained thereby as to the state of the human body are excellently set out. The wisdom of first describing the general principles of immunity before touching on such debated matters as antitoxin, vaccination, and so on, is to be highly commended. A comprehension of these principles will overcome a large part of the *a priori* prejudice with which a lay reader would otherwise approach a subject on which he had already taken sides without any adequate knowledge of the principles involved. The public is well accustomed to the use of diagnostic instruments and appliances, but it is safe to say that there are few who have any conception of why these instruments tell the physician what he seeks to ascertain. A lucid description, therefore, of the principles underlying percussion, auscultation, the use of the thermometer in medicine, the ophthalmoscope, and other instruments, will throw light upon much that is obscure to the public mind. The story of the discovery of anæsthesia is admirably told, and there will be general agreement with the statement that "of all the many blessings which the medicine of modern times has conferred on the human race, none can compare with antiseptic surgery." The wonders of modern surgery following upon Lister's discovery are exemplified in the surgery of the brain, heart, and abdomen, skin grafting, the replacing and transplantation of organs, cosmetic surgery, and the wiring of broken bones. After a judicious middle view in relation to the place of drugs and animal organs in the modern art of healing, Mr. Evans humorously pillories some of the absurd stories whereby the method of discovery of "patent medicines" is heralded. He is of the opinion that it is idle, even if it were desirable, to attempt to prohibit the sale of so-called patent medicines, but he maintains, and we think rightly, that they would be shorn of most of their dangers if it were made compulsory that every such article should bear on its bottle or box a correct statement of its constitutents, for "when the purchaser knew what he was buying he would not be deluded by the charm of the unknown."

The application to public medicine of what has been learned of the principles and methods of modern medicine is admirably illustrated in the chapter on the Political Importance of Malaria, wherein the effect of this and other diseases on the rise and fall of nations is displayed, special reference being made to the observation and research of Sir Ronald Ross and Mr. W. H. S. Jones. The successful fight against malaria and yellow fever in Panama and the West Indies offers a splendid object-lesson for those whose practice it is, without knowing whereof they talk, to depreciate medical science. Industrial diseases are an increasingly important question in these days, and the more widely some knowledge about them is disseminated the better. The same applies to the subject of legal medicine, for a sustained confidence in our judicial processes will be fostered in medico-legal cases by a knowledge of how it is possible in certain legal cases to give those precise statements which are so often a cause of wonder.

Of the medicine of the future the author is optimistic, believing that many of our difficulties will be cleared away and many of our hardest problems solved. The most encouraging thing of all here is the universality of medical progress. To every country medicine has been and is being indebted, and in our own time we have seen Japan, almost fresh from barbarism, come to the forefront in extending the ever-widening boundaries of our science. A broader and more accurate conception of medical problems, a juster appreciation of medical efforts, and by consequence a more intelligent support for enlightened public action, will make possible not only the coöperation of all within the State, but the coöperation of States one with another in the defeat of disease and the victory of health.

Outlines of Biology. By P. CHALMERS MITCHELL, F.R.S., Secretary to the Zoological Society. Revised and Supplemented by GEO. P. MUDGE, F.Z.S., Lecturer on Biology, London Hospital Medical College. Third edition. With 11 plates and numerous diagrams. London: Methuen and Co., Limited. 1911. Pp. 348. Price 6s. net.

THESE "Outlines of Biology" were first published in 1894, and they have been revised and supplemented so that they now cover the ground of the student working for the First Examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons. It is a work written to meet the requirements of an examining board, though it is claimed that it meets in large measure the requirements of other examinations. It is always a question whether this is the best principle to guide the writer of a text-book. Several of the chapters in previous editions have been supplemented or rewritten and amplified, while chapters dealing with ciliated protozoa, sporozoa, the gross morphology of dicotyledonous plants, the structure of the stem, leaf, and

root, have been added. In addition, an attempt has been made to present the chief elementary facts in the histology of simple tissues. Forty pages are devoted to this subject. Amongst the subjects dealt with, besides those already mentioned, are protoplasm, unicellular plants, yeast, bacteria, protococcus and spirogyra, unicellular animals—e.g., amœba, and ciliated protozoa such as vorticella and paramecium. Attention is next devoted to the botanical subjects already mentioned. A short account is given of animal cells and metazoa—e.g., hydra,—the gastrula and cœlomata—e.g., the earthworm. A comparison between invertebrates and vertebrates forms a short chapter, and then follows a full account of the dog-fish and the frog. Mitosis, maturation of the germ cells, and development of organisms complete the text (pp. 311–327). It will be seen that the scope is limited, but so is the syllabus of the Conjoint Board.

If Mr. Mudge has an opportunity of preparing another edition of this work we hope that he will attend to some mistakes which he has allowed to creep into the third edition. In dealing with the action of the yeast plant it might be well to indicate that the alcohol formed is the ethylic form. On p. 20 "Schultze's solutions" should be defined. The composition is mentioned later. Spores are described as having "exceedingly thick" walls. This is apt to be misleading unless measurements are given. The description of the sympathetic system in the frog might easily be improved. In the chapter on Histology the fat-stream through the thoracic duct seems to have been omitted, while the term "reduced hæmoglobin" had better be discarded and called simply "hæmoglobin." That hæmocyanine contains copper instead of iron might be mentioned. A neophyte in biology is not likely to make much of "clasmatocytes"; their name has nothing to do with extensive vacuolation. It is not necessary to immerse a bone for several weeks in a dilute acid to decalcify it. Does a calcined bone upon the slightest touch crumble into dust? Does bone "consist of a meshwork of living bone-corpuscles with the spaces of the mesh filled up with calcareous salts deposited in an organic base"? and does the blood-plasma exude through the capillaries of the Haversian systems of bone? The sarcolemma of striped muscle is said to be difficult of demonstration. Surely this is not the case. In speaking of the structure of nerves it is stated that "each nerve fibre or axis cylinder is enclosed in two sheaths."

These "Outlines" have for many years thoroughly met the purpose which inspired their production; granted that when the student had mastered the whole of the contents he had not gained a very broad outlook on either the vegetable or the animal kingdom, he had certainly prepared himself for further biological work, in case his attention should not be for the future taken up by his professional studies. We have been a little insistent upon the points where revision is needed, because we consider that it would be a great pity to allow the work to lose credit in any way. The illustrations have been largely added to, and 11 half-tone plates—some with several figures—have also been added.

Pleurisy, including Empyema and Bronchiectatic Conditions. By ALEXANDER JAMES, M.D. Edin., F.R.C.P. Edin., Consulting Physician to the Edinburgh Royal Infirmary and to the Edinburgh City Hospital. With illustrations. London and Edinburgh: Oliver and Boyd. 1911. Pp. 243. Price 6*s.* 6*d.* net.

IN this monograph the various forms of pleurisy are considered chiefly from a clinical standpoint, but with special reference to etiological considerations. The work embodies Dr. James's own experience of the disease, and it is from the standpoint of the practical physician that he presents his views. He quotes illustrative cases to bring out more clearly the general types of the condition which he recognises and to give point to the explanations which he offers of some of its manifestations. At the same time he is careful to state the views of other authorities and to give due weight to them. In regard to the causation of disease, while he recognises that micro-organisms play an important part, he is of opinion that this has been much exaggerated, and he attaches far more importance to the investigation of the conditions which enable them to invade the tissue and produce their effects. In other words, he endeavours to investigate the conditions leading to predisposition, susceptibility, and diminished resistance to disease.

The author describes the symptoms and physical signs of pleurisy in all its forms, and in each instance discusses the mechanisms by which they are produced. The area of dulness occurring alongside the vertebral column on the unaffected side in pleural effusion, to which the name of Grocco's triangle is often applied, is regarded by him as due to the slightly collapsed condition occurring in the lung on that side resulting from the diminished elastic traction of the affected lung. Pleurisy associated with new growth of the pleura is discussed and illustrated by descriptions of cases. The subject of empyema is considered in detail, and separate chapters are devoted to a description of the natural methods of cure, the relation of empyema to bronchiectatic conditions, empyema in unusual situations, fœtid and gangrenous effusions, pulsating empyema, and empyema associated with pulmonary tuberculosis, which is called "phthisical" empyema. We must confess to an even greater objection to the adjective than to the noun from which it is derived. Dr. James inveighs strongly against the tendency to "imbue the public mind with the idea that an individual with tubercular disease who observes cleanliness himself and who lives among people who do the same is a source of danger to his neighbours." This he characterises as being as false as it is cruel, a view with which we are in complete accord. A separate chapter is devoted to descriptions of streptothrix and leptothrix empyemas, and the concluding chapter deals with the treatment of pleurisy and empyemas.

Dr. James's book, while not attempting to record much that is new or original, is characterised by common-sense recommendations, and affords a readable account of the conditions of which it treats.

Ticks: A Monograph of the Ixodoidea. Part II: Ixodidæ and Bibliography. By G. F. NUTTALL, F.R.S., C. WARBURTON, M.A., W. F. COOPER, B.A., and L. E. ROBINSON, A.R.C.S. Cambridge University Press. 1911. Part II., 348 pp., 4 plates, and 192 figures in the text; Bibliography 68 pp. 12*s.* net each part.

THE importance of ticks as carriers of disease amply justifies a detailed account of these animals, which has naturally also a very large value as a contribution to systematic zoology. The authors are therefore to be thanked and congratulated upon the successful accomplishment of their very great labour. Inasmuch as the bibliography alone contains just over 2000 titles the mere book-work connected with this undertaking must have been of itself an enormous task. When we consider the careful identification of the several species, and the long journeys to museums abroad to see and compare specimens, our gratitude to these authors should be given in no unstinted measure. Nor have they failed to render the results of their labours legible to any instructed zoologists who shall come after them. For the different species are not only clearly and fully described, but their principal anatomical characters are illustrated by as plain and intelligible outline sketches as we remember to have seen in any work of this kind. The bibliography is printed

upon one side of the paper only, which, together with the inclusion at the end of several blank pages, will allow the student of this group of arthropods to fill in the titles of fresh memoirs as they make their appearance. Moreover, the bibliography is more than a mere record of references. In many cases some brief notion is given of the contents of the paper quoted; this will save much time to those who come after.

Hygiene and Public Health. By Sir ARTHUR WHITELEGGE, K.C.B., M.D. Lond., and Sir GEORGE NEWMAN, M.D. Edin. Twelfth edition, revised throughout. London: Cassell and Co. Pp. 760. Price 8*s.* 6*d.* net.

THE issue of a new and revised edition of "Whitelegge and Newman" deserves a special word of welcome. The popularity of this manual results, to a large extent, from the successful manner in which the authors cover the field of "hygiene" in a book of such moderate size and price. Both authors are especially qualified for the task of selecting essential material, from experience in teaching and examining, from their long and close association with local sanitary administration, and from their present position as heads of their respective services in Government departments. Every few years many alterations and additions become necessary in a work of this sort, for besides the growth of our knowledge of the etiology of disease and of the conditions of its progress and prevention, an ever-widening sphere of influence in the State is opening up before the worker in preventive medicine. Even in the few months which have elapsed since this edition was revised, pulmonary tuberculosis has been made generally notifiable, and a million and a half has been voted by Parliament for sanatoriums, thus opening a new chapter of work on the details of which it will soon be essential for the supervisors of public health to be fully instructed.

The present volume has been considerably enlarged, but retains the general form, systematic arrangement, and clearness of exposition which characterised its predecessors. The recent developments of school hygiene are well set out, including the latest circulars of the Board of Education on the subject, and similarly with the Housing Acts and the duties of medical officers of health as recently formulated by the Local Government Board. The results of modern work on the effect of storage in the purification of water, the parasites of meat, the ventilation of sewers and house drains, and numerous other matters have been incorporated, and the chapters on epidemic and infectious diseases have been brought to date in many respects.

The edition will be almost indispensable to the practising medical officer of health, and is also cordially to be commended to the student and to the general practitioner, who so often needs quickly to obtain information from authoritative sources respecting the functions of the central and local public health departments in regard to preventable disease, and to become acquainted with the increasing number of ways in which public health measures are being brought to bear upon the problems which he meets with in his daily work.

Formulaire des Agents Physiques. By Dr. J. LARAT, Dr. G. DAGRON, Dr. RAY-DURAND FARDEL, and Dr. DUBOIS. With a Preface by Dr. G. DIEULAFOY. Paris: Octave Doin et Fils. 1912. Pp. 451. Price 6 francs.

IN this volume a general account is given of the principles and practice of hydrology, hydrotherapy, massage, and the application of electricity in treatment. In the first portion of the work an attempt is made to bring these measures within the scope of general practitioners. It is pointed out that in large cities establishments exist where such procedures can be carried out by especially prepared appliances, but in country practice such is not the case, and hence the instructions given in this work may prove of value. With regard to massage, instructions are given which the practitioner can have carried out, or he can follow them personally in cases where he chooses to afford the time. Various hydrotherapeutic measures are described which can certainly be made use of with very simple apparatus. Electrical appliances in ordinary practice must, of course, be strictly limited, but some useful hints are given which can be easily followed. The use of mineral baths and waters can only partially be imitated, and the best effects are produced by sending patients to suitable spas.

In the second part of the volume diseases are considered in alphabetical order, and the various physical agents that may be employed are discussed under each malady. For instance, under the heading of Dyspepsia, the particular form in which electricity may be applied is first described, then the mineral waters and spas which are of service, and finally the advantages of massage.

As a work of reference this volume should prove of value, for it contains a large amount of information which is generally only found scattered through various text-books.

LIBRARY TABLE.

The Illustrated Medical Dictionary: A New and Complete Dictionary of the Terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, &c., with the Pronunciation, Derivation, and Definition, including much Collateral Information of an Encyclopædic Character. By W. A. NEWMAN DORLAND, A.M., M.D. Sixth edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 986. Price 19*s.* net, or 21*s.* with thumb index.

The Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A.M., M.D. Seventh edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 643. Price 5*s.* net, or with thumb index 6*s.* net.

A Pocket Medical Dictionary. By GEORGE M. GOULD, A.M., M.D. Sixth edition, revised and enlarged. 34,000 words. London: H. K. Lewis. 1911. Pp. 1005. Price 5*s.* net.

All these dictionaries are now widely known. The rapidity with which new editions follow one another is a testimony not only to their popularity and usefulness, but also to the desire of their authors to keep them fully abreast of the rapid progress of word-making—very much of it unnecessary, it must be admitted, and some of it certainly philologically monstrous. The medical profession is properly severe on medical quackery, but it is itself one of the worst of sinners as regards philological quackery. There is no reason why every medical writer should think himself perfectly competent to invent not only new terms for new things, but even better names for those things that have already been named. But since he will persist in so sinning, it is necessary that the unfortunate reader should have some guide to explain these new words, and this is even more necessary in regard to the monstrosities than to those terms that are regularly formed on sound philological principles, and consequently are more self-explanatory to medical men of adequate education. It would be easy to find much in this regard to criticise in each of these dictionaries, but until the medical profession consents to submit its proposed new terms to a committee of philological experts to ensure that they shall be correctly framed and shall really convey what they are intended to convey it is useless to find fault.

The sixth edition of Dorland's Illustrated Medical Dictionary is said to be "new from cover to cover," and it

certainly contains many new and useful features, among which may be named the spelling of title words with an initial small letter, the reserving of the use of capitals for proper names, the introduction of biographic information—i.e., the full name, nationality, specialty, and dates of birth and death—concerning men whose names are given to diseases, structures, and procedures, as well as the insertion in their proper alphabetical order in the dictionary of short sketches of the "fathers" of medicine, such as Hippocrates, Galen, Soranus—an addition which, we feel sure, will be welcomed by many; the full definition of terms used in dentistry and veterinary medicine; and, finally, a posological and therapeutical table. The two pocket dictionaries are essentially readers' dictionaries, intended to lie handy for reference while perusing medical literature. Dorland's Pocket Medical Dictionary is so compact as to be readily kept at hand and so reasonable in price as to be within everyone's capacity to buy. In our review of the sixth edition we pointed out that the term "Charcot's disease" is usually applied to the synovial destruction in locomotor ataxia and not to insular sclerosis. In the present edition we find "Charcot's disease" defined simply as "multiple cerebro-spinal sclerosis." Gould's Pocket Dictionary is somewhat fuller on this subject, giving "(1) Amyotrophic lateral sclerosis; (2) arthropathy of tabes dorsalis; (3) multiple cerebro-spinal sclerosis." A careful comparison of the two dictionaries by actual practical use shows, as might be expected, that sometimes one, sometimes the other, seems to be more satisfying. The thinness of the paper in Gould's dictionary, adopted to allow of an increase of contents without increasing the bulk, imports a great disadvantage in the matter of turning over the pages. We doubt if even the enormous content of 34,000 words is sufficient to compensate for this irritating defect, which should be obviated in future editions, even though the bulk be slightly increased or the contents condensed.

All the books can be recommended.

Sanatoria for the People. By CHARLES H. GARLAND and THOMAS D. LISTER, M.D. Lond. London: The Scientific Press, Limited. 1911. Pp. 71. Price 1*s.*—In this small volume a good popular explanation is given of what a sanatorium is, "what work it performs, what work it is capable of performing, and in what relation it stands to the other methods of dealing with consumption." The writers take the stand that the sanatorium is the most important link in a chain of measures by which pulmonary tuberculosis could be so diminished that a bright prospect would be offered of its eventual eradication. They quite rightly point out, however, that although such an important one it is only a link, and in order that it may reach its maximum of efficiency it must be supported by the other necessary links. It is necessary that this should be plainly realised by the general public, otherwise with the establishment of the proposed State sanatoriums equally important preventive measures may be neglected. There are a good many useful hints given in the course of the book. For instance, it is stated that the sanatorium, *per se*, should be confined to the treatment of early cases in which there is a reasonable prospect of the arrest of the disease. There has been a tendency to adopt the idea that because a patient has pulmonary tuberculosis, no matter what the stage of the disease, *ergo*, he must go to a sanatorium. Such a conception of the purposes of a sanatorium cannot fail to engender want of confidence in a most valuable therapeutic measure. The authors also lay stress on the importance of differentiating between a sanatorium and a "home of rest." The former must be represented not only as an institution for the treatment of tuberculosis, but also as a school of hygienic living at which the patient will be taught not only how to live healthily, but also how to perform his work healthily. This book will help the non-medical community to a more accurate knowledge of the nature and scope of sanatorium treatment and thus aid in "the State campaign against consumption."

The British Red Cross Society Training Manual, No. 3, by JAMES CANTLIE, M.A., M.B. Aberd., F.R.C.S. Eng., V.D. London: Cassell and Co., Limited. 1911. Pp. 226. Price 1*s.* net, post free 1*s.* 2*d.*

Red Cross Manual of First Aid and Stretcher Drill for Red Cross Students, by D. M. MACDONALD, M.D. Aberd., medical officer of health, Leven, Fife, and examiner to the St. Andrew's Ambulance Association. London: George Gill and Sons. 1911. Price 1*s.* net.

First Aid to the Injured and Sick: An Advanced Ambulance Handbook. By F. J. WARWICK, B.A., M.B. Cantab., M.R.C.S., L.S.A., and A. C. TUNSTALL, M.D., C.M., F.R.C.S. Seventh edition, revised. 60th thousand. Bristol: John Wright and Sons. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1911. Pp. 246. Price, paper, 1*s.* net; leather, 2*s.* 6*d.* net.

Mr. Cantlie's book is intended to guide those who have already acquired a knowledge of first aid and nursing to act collectively in carrying out the Red Cross work, to accustom them to discipline, by which alone efficient service can be rendered, and to stimulate them to exercise their initiative and resourcefulness in constructing and applying improvised means of providing help, shelter, and transport for the sick and wounded in emergencies. It has a semi-military character and is issued with the approval of the War Office. The improvising of camp kitchens, latrines and beds, camp cooking, and many other things connected with outdoor life will render it of even wider service than its original aim sought.

The *Red Cross Manual* of Dr. Macdonald is a compromise between the more technical and the elementary aspects of ambulance work and first aid, covering all the ground necessary for Red Cross work and embodying squad and stretcher drill. The book is divided into 12 chapters, at the beginning of each of which a few notes are suggested for the use of the lecturer, and at the end some questions are inserted for the student. The arrangement will commend it to both teacher and student.

First Aid to the Injured and Sick, the advanced ambulance handbook by Dr. F. J. WARWICK and Dr. A. C. TUNSTALL (both of the Royal Army Medical Corps T.F.), is now in its seventh edition. It has been thoroughly revised and the new stretcher drill has been incorporated from the Royal Army Medical Corps Training, 1911. The book fully sustains its previous reputation.

My Life Story. By EMILY, Shareefa of Wazan. Illustrated. London: Edward Arnold. 1911. 8vo. Pp. 327. Price 12*s.* 6*d.* net.—This book possesses a quality that is rare nowadays—it is the simple direct impressions of a writer who has "been there" and stayed there, and lived the life of the people. The book is so simple and so modest in style that the authoress writes as though everyone knew something of Morocco. She hardly gives any indication as to the position of a shareef, and none as to that of Wazan, yet to describe herself as Shareefa of Wazan should be as good an introduction as (say) the style of Duchess of Norfolk, and the former is in antiquity and national influence far the superior title.

Everyone now ought to know something about Morocco, if only from reading the newspapers. But, also, it is easy to get a cursory glimpse at the Atlantic coast ports even within the limits of a three weeks' cruise. Morocco is far more oriental than many countries lying further east, and

may be a recognised resort for travellers of moderate means and leisure as long as its national character persists The sherifs, or shareefs (the English spelling is optional), of Wazan are hereditary chieftains of great importance in northern Morocco. The word sherif implies a direct descendant from the Prophet, and the sherifs of Morocco are the offspring of Imaum Mahanmal (the fifth descendant of Fatima), whose son Idris fled from Mecca to Tangier in 786 A.D. The sherifs have not always occupied the Sultan's throne; the direct descendants of Idris reigned till 986. After that there were no reigning sherifs till 1544, when the line of Hazan ruled for a century and the Filalie sherifs ever since; to the latter family Mulai Hafid, the present Sultan, belongs. Most of the dominant families in Morocco claim descent from the Prophet, and into such a family an English girl married nearly forty years ago and has remained there, and entered fully into native life, surrounded entirely by native servants and retainers. The results of her experience are set down in this volume, and the simplicity and unaffected *naïveté* of the writing give the record an aspect of entire trustworthiness. The Shareefa led a very retired domestic existence, though overcrowded with difficulties and even dangers to her life. Any foreigner residing in the household of a rich noble in Morocco would be so exposed, even if he or she were a Mohammedan convert; but the Shareefa remained a Christian, and those who know the rigid fanaticism of the country know what dangers and difficulties that implies. Readers must not expect any political information from this volume, or any light upon recent history in Morocco, but, on the other hand, there is a wealth of interesting details about domestic habits, the care of children, the customs of marriage, the ritual of burial, and other matters which only a long and intimate residence could afford to a writer. There is an appendix telling of quaint sayings and superstitions among the Moors. For instance, "Children under two months old must not have their laundry out of doors after 3 P.M., otherwise they will cry all night." This is a sample, and there is a whole liturgy of portents attached to itching in various parts of the body. It is to be hoped that the Shareefa will make further contributions to the literature about Morocco, a literature which is at present very scanty in English and not abundant in any language. The way to a hearty welcome is paved by this very genuine and interesting volume of impressions.

Wright's Improved Physicians' and Surgeons' and Consultants' Visiting List. Compiled by ROBERT SIMPSON, L.R.C.P., L.R.C.S. 1912. Nineteenth edition. Bristol: John Wright and Sons, Limited. Price 5*s.* to 7*s.*—This well-known visiting list contains besides the usual information a visiting list ruled for a month on the open page, to accommodate from 40 to 240 patients, at prices ranging from 5*s.* to 7*s.*, a consultant's record showing the patient, medical attendant, and consultation engagement, obstetric engagements, vaccination engagements, notification of infectious diseases, nurses' addresses, patients' special addresses, motor expenses (a new feature). A perpetual list is also published (Form B), the same in its contents as Form A, but arranged to be commenced at any time and used until filled.

JOURNALS AND MAGAZINES.

The Medical Chronicle.—By way of original matter there is published in the January number of this magazine a thesis by Dr. James Randal Hutchinson on the Presence of Typhoid Bacilli in the Stools and Urine during Enteric Fever and Afterwards. The author concludes that 2 per cent. of such patients become chronic carriers of bacilli, while 8·3 per cent. are still excreting the organisms at or about the time of their discharge from hospital. These figures are based on a study of 50 patients, a number scarcely large enough to give accurate percentage results, but the general conclusions reached are of considerable importance.

The Birmingham Medical Review.—The opening number of this journal for this year is considerably bulkier than those to which we have been accustomed, its increased size being partly due to the thicker paper employed. In it Mr. Leonard Gamgee discusses the Differential Diagnosis of Tumours of the Pylorus, and Dr. R. Beatson Hird deals with Ophthalmic School Clinics, noting that more than one "dunce" has been cured by a pair of spectacles. Dr. Jameson Evans writes on Pituitary Growths, distinguishing the symptoms due respectively to excess and defect of pituitary secretion, the former including acromegaly and gigantism, and the latter some forms of infantilism and "certain cases in which there is excessive development of fat with mental and physical torpor, and disturbance of sexual function—dystrophiæ adiposo-genitalis of Fröhlich."

West London Medical Journal.—In the January issue is published an interesting paper by Mr. N. Bishop Harman on the Comparative Anatomy and Development of the Muscles of the Eye. He notes that the ocular muscles are developed from those of the first gill cleft, and explains on this principle that curious phenomenon known as "jaw-winking," and also certain clinical cases in which paralysis of the ocular muscles is accompanied by weakness of the orbicularis. Dr. Seymour Taylor writes on Unrecognised Diphtheria, and Dr. T. Grainger Stewart on four cases of Spinal Syphilis.

ERRATUM.—In our review of *Analyse des Harns* on Jan. 20th, p. 172, it was stated that "the reference for the account of Moore's test for sugar in the urine is given to the article in THE LANCET of Sept. 26th, 1844." This reference is not quite correct. The article on "Liquor Potassæ: A Test for Sugar in the Urine; by John Moore, Esq., one of the Resident Medical Officers of the Queen's Hospital, Birmingham," appeared in THE LANCET of Sept. 14th, 1844, p. 751. The author's account of the origin of the test is as follows: "That liquor potassæ when boiled with diabetic urine produces a characteristic colour was first noticed by my friend Mr. Palmer, Dispenser to the Queen's Hospital. This led him, with myself, to consider that it might be made practically useful, and induced us conjointly to institute the following experiments."

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

DRY DIAMALT.

(THE BRITISH DIAMALT CO., 11 AND 13, SOUTHWARK-STREET, LONDON, S.E.)

WE have previously examined the malt products of this company and have reported upon their high digestive activity. Those were concentrated preparations in the shape of thick fluids. We have recently had submitted to us a sample of dry diamalt malt extract. This is an attractive-looking preparation, a crisp light-brown powder. In spite of the drying process through which it has been put its activity on starch is remarkable. We found that in one hour at body temperature one part by weight of dry diamalt completely converted five times its weight of starch, while in two hours one part of dry diamalt digested no less than 20 times its weight of starch. The powder dissolves readily in water and has a peculiarly attractive malty flavour. It contains of course all the constituents of malt soluble in water—viz., malt, sugar, protein, and phosphates. The moisture amounted to 2·50 per cent., the protein to 7·93 per cent., and the mineral matter to 1·50 per cent. The figure for protein is the highest we

have found in a malt extract. Its convenience for use, as compared with the sticky extracts, is obvious.

COLLOSOL SILVER AND COLLOSOL MERCURY.
(MESSRS. OPPENHEIMER AND CO., LIMITED, 179, QUEEN VICTORIA-STREET, LONDON, E.C.)

From the point of view of the colloidal state these interesting preparations are quite satisfactory. Further, they are reported to be stable, the ultramicroscopic examination showing the characteristic appearance of a metallic solution. On heating them, also, no change is shown, and when cooled there was no difference. On evaporation the residue obtained was easily taken up again except a very small scum, but there was no suggestion of metal being thrown out. On dialysis the absence of reduced salts was demonstrated. We understand that experiments have shown that the metals present exercise a sufficient antiseptic influence to preserve the colloidal agent in the solution. These preparations are excellent types of the respective metals in a satisfactory colloidal state. An interesting letter appears in another column in regard to their clinical value.

JOHA (SALVARSAN).
(S. MAW, SON, AND SONS, 7-12, ALDERSGATE-STREET, LONDON, E.C.)

Joha is described as a 40 per cent. preparation of salvarsan ready for immediate use. We find that it is an oil suspension of the organic arsenic compound. The oil is iodipin, which is readily absorbed. Some importance is attached to the use of this oil and to the preparation of joha in general, inasmuch as it is said that it causes no pain when injected into the right place and produces no infiltration. The percentage of salvarsan is high, so that large quantities may be introduced by using relatively small volumes of joha. Joha is stated to keep well. Its composition is due to Dr. Carl Schindler, Berlin, and Dr. A. Neisser, Breslau, who emphasise the importance of using the special syringe designed by the former physician, which appears to us to offer decided advantages.

JAEGER SARDINES.
(THE JAEGER-SMEDSVIK CO., CHESTERFIELD HOUSE, 98, GREAT TOWER-STREET, LONDON, E.C.)

We have examined these sardines, which are of a particularly small type. The tin showed no sign of corrosion, and neither the oil nor the fishes showed any metallic contamination. The oil is correctly described as olive oil. The tins are solderless. The sardines had the peculiar appetising flavour characteristic of the good fish, which in oil is a very nutritious dainty.

POULTOGEN.
(THE POULTOGEN CO., 28, MARKET-STREET, MANCHESTER.)

Poultogen is a poultice made on lines indicated by modern practice. It consists of a stiff putty-coloured paste containing antiseptics, amongst which we recognised oil of wintergreen, boric and salicylic acids, an organic iodine compound, and pine oils. The powder basis is calcined silicious earth, the whole being amalgamated with the aid of anhydrous glycerine. It is obvious, in view of this account of it, that poultogen is both antiseptic and hygroscopic, two very important qualities of a poultice. Further, it has the property of retaining heat for a relatively long time. It is an excellent application when moist heat is required continuously.

THIOCOL.
(THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL-LANE, LONDON, E.C.)

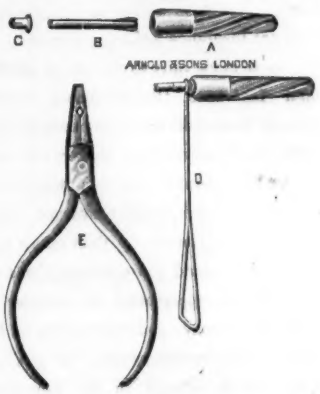
We have already reported upon thiocol, which is a convenient and active soluble guaiacol preparation. The tablets are now issued without the word "thiocol" stamped upon them, as it had been pointed out to the manufacturers that such stamping was sometimes inconvenient. Thiocol serves the purpose of a soluble creasote, and favourable accounts are given of it, chiefly in the treatment of pulmonary affections.

New Inventions.

A MODIFIED INSTRUMENT FOR THE PERFORMANCE OF THE OPERATION OF SIMPLE TREPHINING FOR THE RELIEF OF GLAUCOMA.

AN experience of over 400 trephinings has shown that many of the instruments for the purpose now on the market are imperfect. The best I have seen is that invented by Mr. Sydney Stephenson, and the guiding lines for the present model have been taken from that instrument. The new features presented are as follows:—

1. *The shape of the handle* (A).—In order to give the surgeon a good grip and to prevent his fingers from constantly slipping down as he presses, (1) the handle is made conical with the apex of the blunt cone upwards; (2) the fluting is spiral in arrangement; and (3) the edges of the fluting are serrated at right angles to its length.



2. *The nature of the blades* (B).—These are made so that they can be used and thrown away as soon as they become blunt. The blades are made from solid drawn steel tubing. One end of each blade is divided into three parts and opened to form a spring; this when inserted into the handle holds the trephine firmly; the other end forms the cutting blade, and the edge is brought up sharp from the inside. This enables the operator to cut a hole the exact size of the trephine.

3. *The method of fitting the blades.*—A small pair of pincers (E) is supplied, with which the blade can be easily fitted into, or removed from, the handle. This should always be done at the time of operating. The blades must never be left in after use. The handle is hollowed throughout so that it can be easily and quickly cleaned and dried after use by means of a pipe cleaner (the best form being the Metropolitan pipe cleaner made in the United States of America, and sold by all tobacconists.) The bore of the proximal portion of the hollow is slightly less than that of the distal portion. This, whilst enabling the handle to be cleaned, at the same time prevents the blades from passing up more than the correct distance.

4. A stop (C) can be supplied which can be fitted to any of the blades.

5. *A small handle is provided* (D) with a loop at one end, through which the blades can be passed. This enables an operator to keep the cutting edge of his blade in one position during the operation, and is an improvement on the method of holding the blade with forceps.

The whole instrument is supplied in a small case by Messrs. Arnold and Sons, of Giltspur-street, London, E.C., to whom I am much indebted for the assistance they have given me in working out the details of the instrument.

R. H. ELLIOT, Lieutenant-Colonel, I.M.S.
Government Ophthalmic Hospital, Madras.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 3, 1912.

The National Insurance Act.

THE week in which we write has been a momentous one for the medical profession as far as our possible relations with the National Insurance Act are concerned. At the end of last week, as is more fully explained in another column, the National Insurance Commissioners invited various medical bodies to meet them at a conference to be held to-day (Friday), Feb. 2nd, to consider matters of procedure in bringing the Act into operation and make suggestions thereon. It was obvious to all the bodies concerned that the time given to them in which to make up their minds whether they would or would not attend the conference was entirely too short; there was no opportunity to consider what their representatives should say, and no chance of inviting the opinion of the different constituencies. It was seen at once that a body which refused to be represented might appear to wear the unfortunate air of being sulky, of being determined to lend no assistance to a group of officials endeavouring to do their best; on the other hand, any institution represented at the conference might be considered to have acquiesced in everything that took place, however impressive the necessary silence preserved by its delegates. (There are at the present moment scores of persons ready to say this sort of thing.) We are extremely glad to learn that on Tuesday afternoon at a Comitia of the Royal College of Physicians of London, it was decided that representatives of the College should not be sent to the conference, and we hope that the same will be the decision arrived at by the Council of the Royal College of Surgeons of England, a meeting of which body took place yesterday (Thursday) afternoon, with results which are not known to us as we go to press. Nor do we know what action will be taken by the General Medical Council. The Council of the British Medical Association have been placed in the same position as the two Royal Colleges by the early date suggested for the conference. A meeting of this Council was held on Wednesday afternoon, when it was eventually decided not to be represented at the conference, a decision which followed inevitably upon the fact that the next meeting of Representatives will not be held until Feb. 20th. The decision of the National Insurance Commissioners to hold this conference without giving proper opportunity to the medical profession of coming to any common decision as to what they might desire to recommend is in our opinion most unfortunate. If the Commissioners, instead of wishing to ascertain what is the collective medical opinion, had designed thoroughly to embarrass the leaders of the profession, they could hardly have taken a more apt course.

The suggestion that a Central Council should be formed by representatives of the great corporations, with a temporary mission to advise and support the profession in the present crisis, has met, we are glad to know, with very general approval, and certainly the circumstances which we have described above point strongly to the valuable work which such a Council might do. The Insurance Commissioners have expressed a desire to know what the views of the Royal Colleges are, and it is essential under the circumstances that the Colleges should be able to take a common line in any advice which they might wish to give to the Commissioners as much as in any support which they might be able to offer to the medical profession—and we may be certain that they will offer this willingly to those whose education has lain largely in their hands. Exactly the same words describes the position of the Society of Apothecaries of London. By far the greater part of the medical profession in England, whatever additional academic degrees they may have acquired, owe their places on the Medical Register to the possession of the Diplomas of the Royal College of Physicians of London, the Royal College of Surgeons of England, or the Society of Apothecaries of London, and the governing bodies of these three corporations cannot but feel that the present position of their diplomates is seriously affected by the medical provisions of the National Insurance Act, and that the *personnel* of their future adherents may be much altered in quantity or lowered in quality if those provisions remain the law of the land. If any such Central Council as has been suggested should come into being, the British Medical Association would probably be happy to assist its efforts and would certainly bring to the combination an element of great strength. It is unlucky that at the present moment the Council of the British Medical Association is to some extent on its trial, for the new advisory body would desire to start free from the factiousness which has so far interfered with the attempts of the medical profession to deal with the Act. But the moment that the British Medical Association is itself as a mass satisfied with its Council it is our opinion that the assistance of that Council should be sought, and that a common line of action should be taken against the existing medical provisions of the Act. Delay, reasonable delay, in the date of coming into operation of the Act should be demanded, during which time the position can be calmly reviewed. So far there is, with a very general dislike of the Act, a determination on the part of many thousands of practitioners not to work under it save with certain detailed safeguards. A successful strike would be deplorable in its public effects; a strike which failed would only be less dreadful in the loss of prestige that would result. A calm consideration of the regulations by a Central Council may avert grave disasters, and for this reasonable time is required.

Personality in Medical Teaching.

A CANDIDATE for the office of assistant physician or assistant surgeon to a great hospital, an office to the holder of which fine opportunities of teaching medicine or surgery to others must in due time be afforded, could perhaps produce no higher recommendation than evidence that, in the capacity of house physician or house surgeon, he had been able to secure a following of students when performing his duties in the wards; or, in other words, that he had rendered these duties interesting and instructive to bystanders, and had prevented them from degenerating into routine. The contemporaries of a great clinical teacher, when their memories go back to the earlier portions of his career, will seldom fail to recall as a characteristic of him that he possessed an exceptional power of directing his own and their attention to matters which at first sight were apparently of only subordinate significance, and of deriving from them important guidance in respect either of diagnosis or of treatment. For example, a whole generation of students at St. Bartholomew's Hospital will remember exactly these things of the late Sir HENRY BUTLIN, whose untimely death is recorded in our columns this week. To the perception of such a teacher few symptoms would be trivial and none would be negligible, while the positive value to be attached to each would only be determined by an analysis of the conditions attending or producing it. The consequent intellectual operations would be performed more rapidly and, so to speak, more instinctively as they became more and more habitual, until a condition might ultimately be attained in which they would seem to onlookers to be intuitive and to depend upon a degree of penetration which the average practitioner could scarcely hope to attain. We should hold, on the contrary, that this swiftness of operation, coupled with inclusiveness and accuracy, was but the due reward of diligence, habitually exercised upon matters which the negligent would have passed over as unworthy of their attention. It is, we believe, the power of grasping such matters which mainly constitutes the difference between the more and the less skilful practitioner, and it is the power of fruitfully directing attention to them which mainly constitutes the special qualification of the really great teacher. The methods of appeal to the senses of the learner may be almost infinitely various, but the principle underlying them is practically always the same. The teacher by example may apply some test which the learner would not at first have supposed to be called for in the conditions manifestly present—such, for instance, as an examination of the urine for albumin or for sugar in a case of defective vision; the Socratic questioner may guide his class to sound conclusions through inquiries which at first sight appear irrelevant; and the born demonstrator may point out the greater or less readiness of the abdominal muscles to assume a condition of protective rigidity, and may draw such inferences from the facts as they will justify. The principle that no discoverable condition should be suffered to escape notice, or should be omitted from consideration in the formation of a reasoned judgment upon the case, as it is that upon which the attainment of accuracy must depend, is also that which it is the first and most important duty of the teacher to inculcate.

The qualities of sense and of intellect which mainly contribute to the complete development of the accomplished clinical instructor are not always those which are of the highest importance to his colleague in the lecture-room, whose work is rather the inculcation of principles than the demonstration of facts, and whose main object should be to clothe those principles in language calculated at once to stamp them upon the memory and to render them clear to the intelligence. A good presence, an impressive manner, an agreeable voice, a perfect intonation, are all of them aids of high importance; but the most important of all is such a knowledge of the English language as may reduce the employment of technicalities to the lowest possible point, and may permit the construction of sentences which, in the terms of COBBETT'S famous description, should be "as clear as a pebbled brook," and "should not only not be liable to be misunderstood, but should not be capable of being misinterpreted." There are only a few now living who can remember how these conditions were fulfilled by those lectures of Sir THOMAS WATSON which furnished a text-book of medicine to two generations of practitioners, and which survive, although the progress of scientific discovery has gone far beyond them, as perpetual examples of the way in which it is possible to express the recondite in language of absolute lucidity, and to distinguish with precision between what is known and what is conjectural. No man who aspires to be a great, or even a good, teacher can take too much pains in the perfecting of his most essential weapon, language, or in the attainment of a power to draw a verbal picture which shall at once satisfy the intellects and impress the memories of his auditors. Nor can he be too careful to swim without corks, and to render it clear that his mastery of his subject needs no reinforcement from notes or references. Most of us have dismal recollection of lecturers at our medical schools, who sat opposite to the class with the head well down, reading aloud in a dreary monotone from the proof sheets of a forthcoming treatise. The true lecturer should lose no opportunity of placing himself *en rapport* with his audience, and he may often do this most successfully by selecting some single member of it, and by pressing his point home until an answering intelligence in the face of the special hearer shows that, in one instance at least, the end desired has been attained. The average student, even if he be not of the highest order of industry or of capacity, is prompt to recognise and to admire knowledge in his teachers; and those who would teach him efficiently should regard as a first duty the fulfilment of his reasonable expectations in this respect. They should make it abundantly manifest, alike in the wards and in the lecture

room, that they have carried their own studies to a point which he is not yet prepared to reach.

DUGALD STEWART once pointed out that the possession of a perfect English style, in which it seemed as if every word used was the only one which could have been selected for that particular place, or to express that particular shade of meaning, was apt to induce the careless reader to suppose that he also could write in a similar manner; and, as all things have the defects of their qualities, it is perhaps conceivable that the best possible lecturing and clinical teaching may sometimes lead the student to underestimate the difficulties of the pursuit in which he is engaged, and to aim at results by shorter roads than those which alone render them attainable. The almost intuitive perception of a thoroughly trained observer may induce a student to strive after rapidity of diagnosis by a hasty glance at the salient, and possibly misleading, features of the case, and in this way to attain nothing but a lamentable facility for jumping from insufficient data to erroneous conclusions—conclusions to which the person so framing them will be only too likely to adhere until it is too late to rectify the consequences of his error. A teacher can hardly be too much upon his guard in striving to protect his pupils against this particular source of error, and in impressing upon them the necessity of neglecting no method of inquiry by which light may possibly be thrown upon any of the conditions of a case which admits of doubt. Under the operation of the new Insurance Act, under whatever shape it may be brought into operation, and under whatever terms medical men may be found who will work according to its provisions, the profession will be confronted with very serious questions concerning the validity of the claims put forward for relief on account of illness, and will in all probability be compelled to take the occurrence of systematic malingering into serious account. It is notorious that the recent enactments for affording compensation for injuries received during employment have definitely lengthened the average time of consequent disablement; and it is not necessary to regard the whole of this effect as a result of deliberate imposture. But, as Mr. FRANK MILTON said in our columns last week, "it is difficult to avoid coming to the conclusion that the benefits to be obtained under the Workmen's Compensation Act have had a distinct tendency towards increasing the number of cases of accident applying for treatment." This increase is partly due, no doubt, merely to the fact that the compensated man is in no hurry to return to his occupation. In the future, however, a large element of malingering is likely to come under the notice of medical men, and to derive importance from the fact that it will be at least as necessary to protect the honest claimant as to expose the dishonest one. The medical and surgical teachers of the near future may not improbably be faced with the new duty of preparing their pupils, in a great number of obscure or doubtful cases, to hold an even balance between the patient and the State; and upon their success in this endeavour will largely depend the success of any system of general insurance against sickness, however sound its financial basis.

Tenure of Office of Medical Officers of Health.

ALTHOUGH the conditions of appointment of medical officers of health in the provinces have been considerably improved by the terms of the General Order of the Local Government Board of Dec. 13th, 1910, they are still far from satisfactory. Until the end of 1910 medical officers of health in England and Wales, except those appointed by the metropolitan borough councils and by county councils, could be, and usually were, appointed by local authorities for limited periods, usually of one year. At the expiration of the period of appointment there was no obligation on the part of the authority to re-appoint, and no intimation was required to be given to the medical officer of health that he would not be re-appointed. The order of Dec. 13th has enabled a local authority to make an appointment without limit of time, in which case the officer appointed holds office until he dies or resigns, or is removed by the electing authority with the consent of the Local Government Board, or is removed by the Board itself, or is proved to be insane. That is to say, his tenure of office is similar to that of a Poor-law district medical officer who resides within his district. The appointment of medical officer of health may, however, still be made for a specified period, but at the expiration of that period the appointment is held on a yearly tenure, the local authority having power to give three months' notice of its termination, provided the notice expires at the same period of the year as that at which the original term expired. The assent of the Local Government Board is not necessary to make this notice a valid one, but in one or two instances, where there does not appear to have been adequate reason for such dismissal, the Board has intimated that it would not be prepared to sanction the appointment of a successor, with a view to the refunding of a moiety of the officer's salary from the Exchequer grants. This course was adopted in the case of the Claypole rural district council, who called upon the medical officer of health, who had held office for some years, to resign for what, in the opinion of the Board, were insufficient reasons. The ratepayers of the district are now, therefore, paying the whole of the salary of the newly appointed medical officer of health. If the Board will continue this policy the position of medical officers of health will be materially improved, though it would be still better if they were placed in the more secure position occupied by all Scottish medical officers of health and by those who hold office in London and under the county councils.

FORTY-FIRST CONGRESS OF THE GERMAN SURGICAL SOCIETY.—This congress will take place from April 10th to 13th, 1912, at Berlin. As the space in the Langenbeckhaus, which has been resorted to on former occasions, has been found too small, the committee of the society has for this year's meeting hired the Beethoven Saal der Philharmonie, Berlin (entrance, 32, Köthener Strasse). The congress will be opened on the first day at 10 A.M., and on the other days the hours of business will be from 9 to 12.30 and from 2 to 4. The president for 1912 is Geh. Med.-Rat. Professor Carl Garrè, of Bonn. Cards of membership and all particulars may be obtained from Herr Melzer, Langenbeckhaus, Ziegelstrasse, 10/11, Berlin, N.24.

Annotations.

"Ne quid nimis."

THE RHODES SCHOLARS AND THEIR CAREERS.

THE annual statement of the Rhodes Trustees—describing the work achieved under the trust in sending scholars to Oxford from the colonies, Germany, and the United States,—is already an interesting document now that definite results are beginning to be ascertainable, and the statistics which it contains will increase in importance as time passes. In 20 or 30 years, when the promising young men of to-day are in a position to have their life work scrutinised, and when the educational antecedents of those who then are occupying leading positions in statecraft and diplomacy, in the professions of science and law, in commerce, or in the world of action and adventure are inquired into and criticised, the dispositions of the will of Cecil Rhodes will come up for judgment after a verdict has been found upon proven facts. At present we are watching the development of the experiment of sending to be educated at Oxford nearly 200 students at a time (there were 176 Rhodes scholars on the books in 1910–11) who, but for the intervention of a great and original minded Englishman, would never have gone there except possibly upon brief visits as more or less intelligent tourists. Up to now they have worked with varying degrees of intellectual distinction, their list of honours during the past 12 months recording but few first classes, seconds and thirds being more conspicuous, numerically. Not the least interesting part of the experiment, it must be remembered in this connexion, is the consideration of physical and athletic excellence as well as of intellectual qualifications imposed by the will of the founder upon those who select the beneficiaries under it. The interest, of course, lies not in studying the athletic performances of Rhodes scholars at Oxford, but in watching the effect of special cultivation upon intellectual plants selected with equal regard for the *corpus sanum* and the *mens sana*, a condition of choice which obviously places some restriction upon merely academic results. At present Rhodes scholars appear by their choice of professions to suggest that the exercise of useful influences may be expected of them rather more than conspicuous intervention in the economy of the world. Out of 250 who had done with Oxford and made their first choice in the matter of professions at the beginning of 1910, 84 had selected educational work, 66 the law, and 19 religious callings. Educational work with the prestige conferred by an Oxford degree opens, no doubt, a tempting path to immediate independence, and both the law and education are careers which may be abandoned, or which lead to high distinction within their own limits, but the numbers given above leave but a restricted number for entry into science, medicine, engineering, the civil service, diplomacy, commerce, and the other avenues of distinction open to a class of picked youths who have enjoyed exceptional educational advantages. In the future of those who enter the medical profession we naturally take a keen interest. There are 11 of these among the 250 to whom reference has been made, and we look forward to seeing the proportion increased, to the advantage of the medical profession and its patients, using these terms in their widest sense. Science recognises no territorial limitations, and the bond of a common struggle against disease and human suffering will be strengthened by early friendships and by the sympathetic comradeship of men working thousands of miles apart who have drawn their first instruction from the same source and inherited the same honourable traditions.

THE CAMPAIGN AGAINST TUBERCULOSIS IN ITALY.

WE have received a copy of the journal *La Tubercolosi* for November–December, which is published monthly at Rome as the official journal of the organising committee of the Seventh International Congress against Tuberculosis meeting at Rome from April 14th to the 20th of this year. The subject-matter is printed in Italian, French, German, and English. Forms of application for membership of the Congress, and information in regard to reduction in rates of travel to the Congress, are included with this number. There is also an interesting *résumé* of the measures in force and those in preparation to combat tuberculous disease in various parts of Italy. It would appear that hitherto more attention has been paid to general hygienic reforms and to the moral and economic elevation of the working classes than to the actual provision of sanatoriums. In general these reforms may be summed up as endeavours to raise wages, the provision of insurance against accidents, and of legislation against diseases caused by conditions of labour, and measures to secure better housing. Concessions are granted by the Italian Legislature to certain coöperative societies, mutual benefit societies, charitable institutions, corporate bodies, and local authorities to further cheap and satisfactory housing. Regulations are in force for the construction and sale of such buildings and for the expropriation of areas for hygienic reasons. Facilities for loans are also offered. Recently a new board has been constituted in many Italian cities called the Independent Board for the Cheap Housing of the People. It is supported by contributions from municipal bodies, the savings banks, benefit and loan societies, and from other societies and private individuals. The provision of sanatoriums is also being actively pushed forward, and a list of these, with a brief description of their scope and accommodation, is included in the article to which we refer. Various tuberculosis dispensaries, modelled on those now general in most countries, have been started, and are engaged in the prophylaxis and treatment of the disease. A central alliance of all the agencies at work has recently been inaugurated by Professor Guido Baccelli, Professor Rossi-Doria, and Professor Tamburini. Its objects are the coördination of the various societies and agencies at present engaged in the work of combat against tuberculous disease and to awake public interest in the subject. We have read the article with interest, as it shows that the Italians are fully aware of the importance of this subject to the national welfare, and are actively engaged in work with this object in view. The session of the Congress should serve a useful purpose in directing public attention to these matters and in aiding the authorities in their work.

SALT IN POTABLE WATERS.

THE amount of sodium chloride found in potable waters rarely exceeds 5 grains per gallon, but there are certain exceptions, the most notable of which are in the county of Essex, where the water derived from the Thanet sand and from the chalk below contains considerable quantities, not only of salt, but of sodium carbonate. Over a large area the salt averages 50 grains per gallon and the sodium carbonate 20 grains, and over a more limited area the salt increases to 80 grains and upwards per gallon. The sodium carbonate, however, does not increase in the same proportion. The origin of these saline constituents has given rise to much speculation amongst chemists and geologists, but it is accounted for by the researches of Dr. J. C. Thresh, county medical officer of Essex, who, in an article which is published on p. 315, shows that they are derived from an admixture of sea water and chalk water altered by percolation through

the Thanet sand. The sodium chloride derived from the sea water remains unchanged, whilst the calcium carbonate of the chalk water is converted into sodium carbonate. That thousands of persons near London use for drinking and all domestic purposes a water containing over 50 grains of salt per gallon will cause general surprise, but Dr. Thresh's studies of the sickness statistics of the districts in question show that they are amongst the healthiest in the county, and as the county mortality rates are generally the lowest, or very nearly the lowest, of all the counties in England and Wales, it is clear that the use of such water has no appreciable effect upon the health of those who habitually drink it. During the last few years the difficulties experienced in obtaining water-supplies for large villages in the north-east portion of the county of Essex have raised the question whether a water of the above character containing 80 grains of salt per gallon will be objectionable for domestic purposes. Farms and cottages dotted over the area are supplied with such water from deep wells, and strangers, after getting accustomed to the flavour, do not object to it, while all who use it consider it to be perfectly wholesome. The only available sources of supply for the villages referred to appear to yield water of this character, and Dr. Thresh has been compelled to express an opinion and has decided that the water is wholesome and may be used with impunity. His opinion is based exclusively upon his Essex experience, no other being apparently available. At various times scurvy and other diseases have been attributed to the excessive consumption of salted food, and in the *Indian Medical Record*, April, 1911, a list is given of the evils arising from "undue salt eating," but there is no definition of an undue amount. There is no doubt from the experience in Essex that 50 grains of salt per gallon of water is perfectly harmless, and some evidence that even much larger amounts have no ill-effects, but it is desirable that this evidence should be further supported before expending thousands of pounds upon works to supply whole communities with waters of this character.

THE PROPAGATION OF PLAGUE WITHOUT THE AID OF INFECTED RATS.

WE have received from Dr. Choksy, of Bombay, a well-known authority on plague, a letter, which appears on another page, adverting to an article published in THE LANCET of Dec. 16th, 1911, p. 1714, entitled, "The Propagation of Plague without the Aid of Infected Rats." While agreeing in the main with our conclusions, which were based upon the circumstances of the late disastrous epidemic of pneumonic plague which swept across Manchuria during the winter months of 1910–11, Dr. Choksy contends that attacks of secondary pneumonia arising in bubonic cases, though theoretically potential sources of infection to those in contact with them, do not, as a matter of experience, cause infection of these persons; and that if any of those in contact with such cases do contract plague it must occur through the agency of rat fleas. In a brochure on "The Various Types of Plague and their Clinical Manifestations" which Dr. Choksy has forwarded to us, he has set out clearly the dangers arising from primary pneumonic plague. This type, he says, is the most insidious and virulent form of the disease, and at the same time highly infectious; it is usually contracted by the inhalation of the fine spray of the patient's sputum which teems with B. pestis. He also points out in his pamphlet that an apparent primary pneumonia "may not really be so, but a secondary development of malignant infection, with deep-seated buboes not felt during life-time, and early septicæmia." These instances, though pneumonic, have not in Dr. Choksy's experience proved infectious to those around the patients. It has, however, to be remembered that cases treated in well-constructed and well-administered hospitals such as those under Dr. Choksy's charge in Bombay are on a different footing from those occurring in dirty and ill-ventilated hovels. In the Manchurian epidemic, which spread so rapidly, it is surmised that some of the earlier cases of plague among the tarabagan trappers were treated in overcrowded and unventilated huts or tents, where the virulence of the infection might have become exalted, and the natural resistance of the occupants greatly reduced. It is worth mentioning in this connexion that the form of plague which frequently appears among the Mongols and other tribes in Central Asia, as well as among nomadic folk generally, is said to be nearly always of the pneumonic type, and that it is excessively fatal. This has been attributed to the extremely insanitary conditions under which these people mostly live. Their homes, as well as their persons, are described as being habitually dirty. They do not wash even their faces for many months on a stretch, and they wear their dirt-sodden clothing day and night, year after year, until the garments literally rot upon their backs. The occurrence of a secondary pneumonia in a case of plague treated under similar conditions would, in our opinion, be likely to lead to infection of persons in close proximity to the sufferer; and if a combination of circumstances arose, such as those which were met with in Manchuria in 1910–11, affording a sufficient supply of susceptible human material, a virulent and swiftly spreading epidemic might be originated. The Advisory Committee for the Investigation of Plague in India appear to regard secondary pneumonia as a possible source of danger, for one of the members of that body not long ago in a public address on plague made the following statement: "The universal experience in India has been that bubonic plague, whether it has become septicæmic or not, is for practical purposes not infective, unless it develops a secondary pneumonia."

THE FINGER PHENOMENON: A NEW SIGN OF ORGANIC HEMIPLEGIA.

SINCE Babinski discovered his invaluable sign of organic disease of the pyramidal tract several observers have described other reflex manifestations in the lower limb, but the upper limb has received comparatively little attention, and no sign comparable to the toe phenomenon has been described. In the majority of cases there is no difficulty in recognising an isolated monoplegia of cerebral origin or a paralysis of the arm accompanying hemiplegia, yet at times cases are seen in which the diagnosis between functional and organic paralysis of the upper limb is difficult. Again, in a small group of cases of hemiplegia dating from infancy the paralysed limbs or one of them (the upper) may be free from spasticity, and old anterior poliomyelitis may be suggested. If the lower limb has greatly improved or been only slightly involved the difficulty of diagnosis may be great. In the *Journal of the American Medical Association* of Nov. 11th, 1911, Dr. Alfred Gordon has described a new sign of organic hemiplegia, which he terms "the finger phenomenon" and which may be useful under these circumstances. The forearm of the affected limb is elevated and the elbow placed on a table. The wrist is then lightly grasped by the examiner's hand with the thumb against the pisiform bone and the other fingers on the dorsum of the wrist. Pressure is made with the thumb against the pisiform bone, especially on its radial side, care being taken not to produce pressure on the dorsum of the wrist where the extensor muscles are located. In organic hemiplegia the fingers of the patient's hand are seen to extend and sometimes to spread out in a

fan-like form. In some cases extension is observed only in the fourth and fifth fingers; in others all five extend, and in still others the thumb and the next two fingers. In old hemiplegia in which contracture is pronounced the phenomenon is not very marked, and may not be obtained. In recent hemiplegia (under six months) the reflex was usually prompt, but in some cases was elicited only after making two or three tests. As controls normal persons and patients suffering from brachial palsy of poliomyelitic and hysterical origin were examined.

THE NEW FATS.

IT is not so very long ago that the fatty substances essential in the human dietary were derived almost exclusively from an animal source. Beef, mutton, pork, milk, butter, or cream practically supplied the fatty needs of the body. The only vegetable fat hitherto consumed in important quantities was olive oil. It use, however, was generally limited to the salad, and not a few people prefer the salad without the addition of oil. Cod-liver oil, the most familiar example of a fish oil, was used medicinally because it was regarded to be readily assimilated, and so was held to be a certain and rapid source of energy. The important question of the digestibility of fats appears to have received attention chiefly in regard to animal fats. In physiological literature, at all events, it is difficult to find any definite conclusions as to the digestibility of vegetable fats, and yet the matter is of increasing importance, seeing how rapidly vegetable fats are being introduced into our daily articles of diet. The introduction of butter substitutes in the "seventies" created an opening for vegetable fats, and the industry in these fats is growing enormously at the present time. Margarine at first consisted of beef fat churned with milk and coloured, but now a very wide range of vegetable fats is available for making part, at any rate, of this butter substitute. There is a very large trade in sesame oil, cocoa-nut oil, palm-kernel oil, arachis oil, cotton-seed oil, sunflower oil, maize oil, poppy oil, and a number of other vegetable oils, all of which are destined for human consumption, chiefly in the form of butter substitutes. We are constantly told that these are wholesome, but occasionally it has happened that in the race for cheap sources a poisonous oil has been found and actually used in making a butter substitute, while several nut oils are known to have marked purgative properties. The time has arrived, we think, when the broad question of the suitability of vegetable fats, such as those just mentioned, for purposes of human consumption, compared with animal fats, should be thoroughly investigated and discussed. It is generally admitted that butter is the most digestible edible fat we possess, and if that is the case something should be done to ascertain whether the use of one or any of the vegetable fats as substitutes, on the enormous scale of the present day, is justified on sound physiological premises.

DIAGNOSIS OF ENTERIC FEVER BY CONJUNCTIVAL INSTILLATION.

AT first sight it would seem superfluous to search for a diagnostic test of typhoid fever; the Widal reaction is easily made, and the margin of error is small. It fails, however, in one respect, and that an important one in the case of typhoid fever; it is not likely to be positive until the disease is well on in its course. To meet this objection Chantemesse in 1907 applied the principle of Calmette's ophthalmo-reaction for the diagnosis of tuberculosis to typhoid fever and found it reliable. In the hands of other investigators, however, the test proved not quite so certain as its author's reports had suggested. A possible explanation of this variability is supplied by Dr. Charles R. Austrian, who reports his experiences of the test in the *Johns Hopkins Hospital Bulletin* for January, 1912. His earlier applications of this method of diagnosis led him to think that the negative results which he encountered in cases of undoubted typhoid fever might be due to variations in the strain of the infecting bacilli. To meet this objection he prepared the emulsion, to be used for instillation into the conjunctival sac, from 80 different strains of typhoid bacilli. The results obtained were encouraging; a positive reaction developed in 71 out of 75 patients with typhoid fever, while in 190 control cases (patients suffering from other diseases than typhoid fever) a reaction was seen only twice, in both instances this occurring in patients who had had typhoid fever previously. To carry out the test fresh preparations should be used; the patient should turn the head to the left if the right eye is selected; the lower lid should be partially everted, and one drop instilled into the lower conjunctival sac so that it runs towards the inner canthus. Immediate closure of the lids must be prevented, and the eye must not be rubbed. A positive reaction consists in congestion of the vessels of the caruncle and of the inferior palpebral conjunctiva, which reaches its maximum in six to ten hours (the membrane becoming deep purple), and persists for at least 20 hours, with lacrymation, purulent exudation, and bulbar suffusion. Atypical reactions may develop in non-typhoid cases, but these are more diffuse and less enduring. According to Dr. Austrian there is no difficulty in distinguishing between the two types. He believes that this reaction is similar to that devised by Calmette for the diagnosis of tuberculosis, in that it is the outcome of sensitisation of the patient's tissues to the toxins of the specific organism, and he makes the interesting suggestion that atypical responses occurring in non-typhoid persons are due to "group-sensitisation"—i.e., to sensitisation of the tissues to typhoid toxin by the action of the toxins of allied bacteria, such as B. coli communis. Perhaps the most important claim made for this method of diagnosis is the early stage of the disease at which a positive reaction is to be anticipated; in 18 out of 19 cases examined during the first week a positive result was obtained, and in 77 per cent. of the cases which reacted to the ophthalmic test the Widal reaction, applied at the same time, was negative. It should be added that there were no untoward or uncomfortable consequences.

INSANITARY BERTHS IN THE MERCHANT SERVICE.

THE Imperial Merchant Service Guild, consisting of captains and officers, is doing a good and a very necessary work by bringing pressure to bear upon the Board of Trade so as to secure better sanitation on board merchant ships. The agitation to which the late Mr. Plimsoll, "the sailor's friend," devoted his life was heartily supported by the general public, and something was done to prevent seamen sailing in "coffin ships." But a ship may be a coffin ship without sinking to the bottom of the sea. Bad sanitation may produce fatal results just as easily as a shipwreck. Thus, for instance, we have before us a letter addressed by an officer to the company he was serving and explaining why he is compelled to resign. His story runs as follows. When, as was frequently the case, the vessel shipped a sea the water would come through under the door into his private cabin, having first scoured out the adjoining lavatories and closets. These closets were divided off from the officers' quarters by a wooden partition which was neither water-tight nor air-tight, so that it did not prevent the unpleasant odours from penetrating the officers' berths, and they were frequented by 14 men. The Imperial Merchant

Service Guild urges that officers are entitled to separate cabins with sufficient room and adequate equipment, and the cabins should be situated in a part of the ship where proper rest and relaxation can be enjoyed. Officers' cabins at present are often very small, and two or three officers are made to share this insufficient accommodation. Then they are not only overcrowded, but at times are absolutely insanitary, as in the case mentioned above. If such conditions exist in regard to the officers, what must the quarters inhabited by the seamen and firemen be like? Some evidence as to the prevalence of pulmonary tuberculosis in the Merchant Service was given in a paper by Dr. Murdoch MacKinnon in THE LANCET last autumn.[1] This paper showed how great are the permanent disablement and loss of life from a preventable disease. From time to time also we have described the very unsatisfactory state of affairs that prevails at sea,[2] and lamented that it has been left to France, Austria, and other nations to enact laws that secured for their seafaring population much better sanitary conditions than prevail in the British Merchant navy. This is a question on which officers and men might well unite, and they should claim conditions at least equal to those which continental governments enforce in their merchant navies.

PELLAGRA IN NYASALAND.

PELLAGRA is a disease which, if practically unknown except by name to the profession at home, has within recent years more or less suddenly become of pressing importance from the epidemiological and other points of view. It is true that only two cases, apparently, have been reported in this country, but in America during the last few years there has been a prolonged and severe epidemic, which has ravaged more particularly the Southern States, neither white nor black being exempt, and in which many hundreds, if not thousands, of cases have occurred. Perhaps the term epidemic is rather inaccurate in this connexion, for the question which has agitated the profession in America, and which was one of the subjects of discussion at the Pellagra Conference in N. Carolina, is, how far can the appearance of the disease be said to be due to fresh introduction or extension, and how far simply to increased facility in recognising the affection? In the case of the recent disastrous American outbreak probably both factors are implicated. Pellagra is endemic in the Southern states of Europe, in Italy, Roumania, Bulgaria, and so on. It occurs in the same way in Lower Egypt, Algiers and the Red Sea Littoral. At a recent meeting of the Society of Tropical Medicine and Hygiene Dr. Hugh S. Stannus, one of the medical officers of the British Central Africa Protectorate, read an important paper on the occurrence of pellagra in Nyasaland, where hitherto the disease has not been known or at least not been recognised. Dr. Stannus, while acting as medical officer to the central native prison at Zomba, was struck by the appearance in certain inmates of a rhagades-like soreness at the corners of the mouth, associated with changes on the surface of the tongue, with the subsequent development of symmetrical skin eruptions on face and neck and elsewhere, and also with the development, at a later stage, of paretic symptoms. It was not until the whole cycle of symptoms had established itself that Dr. Stannus was convinced he was dealing with an outbreak of pellagra. There can be no doubt, from the description which he supplies, that the disease occurs in Nyasaland in typical and easily recognisable form. Apparently there is a seasonal maximum in April and October. The earliest symptoms are this rhagades-like condition at the muco-cutaneous borders of the angles of the mouth, a similar condition at the free margin of the prepuce, and a curious glossitis which denudes he tongue of epithelium and renders it shining and bright pink in colour. Then appears the characteristic skin eruption, as a rule on the extensor surfaces of the forearms, in the triangles of the neck, on cheeks, nose, and forehead, on the back of the hands, on the shins, and the dorsum of the feet. The eruption preserves a remarkable bilateral symmetry. Gastro-intestinal and other general symptoms often occur in the early stages. Of great interest and pathogenic significance are the phenomena indicative of invasion of the nervous system. Headache, mental apathy, and moroseness are specially noted by Dr. Stannus. There is commonly a sadness of facial expression and an inability or unwillingness to smile which are almost pathognomonic. Cranial nerve symptoms, in the shape of transient amblyopia, central scotomata, loss of sphincter tone in the iris, and deafness may occur. Paresis or paralysis of the lower extremities is common, tremor of the limbs is the same, subjective sensory phenomena are also very frequent, consisting of tingling and burning pains in the feet, toes, and calves, often associated with tenderness of the latter on pressure. The organic sphincters are not impaired in function. There can be little doubt that pellagra is a toxæmia affecting more particularly the central and peripheral nervous system, rendering the skin more liable to irritation by the sun's rays, and recurring in successive years in a chronic form, but its pathology, epidemiology, and etiology are still to be elucidated. Dr. Stannus suggests that the nervous lesions are produced by a toxin entering the spinal theca by the lymphatic spaces of the posterior roots, setting up a posterior lepto-meningitis and then invading the cord. The disease presents suggestive resemblances, especially in symptoms, to certain well-known nervous diseases, on the etiology of which, therefore, it may some day prove by analogy to shed light. In view of certain current opinions as to the causation of the disease, it is noteworthy that Dr. Stannus's cases only rarely had maize as an article of food; their staple diet consisted of rice. There is reason to suppose that pellagra may be associated with the occurrence of flies of the simuliidæ family, whose habitat is in the neighbourhood of running streams. It is to be hoped that Dr. Stannus's suggestive paper will be provocative of further investigation into the subject of pellagra, as the disease is one, as above remarked, of singular interest, whose recent expansion is a fact of serious import.

ADUMBRATIONS OF ANTISEPSIS.

ABOUT a century before the great discoveries of Pasteur and Lister it is curious to find William Alexander, an Edinburgh surgeon, discussing the animalcular origin of putrefaction and putrid, or, as we should now say, septic, diseases, and dismissing as untenable what he supposes to be a theory founded on inaccurately conducted experiments. The believers in the rejected theory included such names as those of Plenciz, Linnæus, Buffon, Needham, Robert Boyle, and Athanasius Kircher, a Jesuit of universal learning, who, in 1658, published "Scrutinium Physico-medicum Pestis, Origo, Causæ, Prognostica," &c., a work in which the plague is attributed to what for lack of a better phrase we must call "a bacterial origin." But though in 1771 Alexander will have nothing to do with what has since triumphantly developed into the germ theory of disease, he nevertheless speculates and acts almost as though the theory were already an accepted dogma. Thus in one of his "Experimental Essays," published in 1768, three years

[1] THE LANCET, Sept. 23rd, 1911, p. 885.

[2] THE LANCET, Feb. 8th, 1908, p. 457, March 27th, 1909, p. 945, and Sept. 17th, 1910, p. 880.

earlier than his work inquiring into the origin of putrid diseases, under the title "Essay on the External Application of Antiseptics," he resembles a child playing at hide-and-seek and growing decidedly "warm." His approximation to certain truths, which, as a rule, it is supposed, are entirely modern, appears in such a passage as the following: "Sir John Pringle, as far as I know, was the first who attempted to sweeten putrid flesh by immersing it in antiseptics. Dr. Macbride [another Edinburgh surgeon who published just prior to Alexander] has improved his hints ..... by suspending it in the steams which arose from them. It has been an established fact these many years that poultices of bark or spirituous antiseptic fomentations, applied to gangrened parts, have very much contributed to recover them." We are here within an ace of the treatment of wounds by antisepsis. In the succeeding passage we find ventilation insisted on in an age supposed to be peculiarly careless in the conduct of the sick-room. "At present almost every practitioner who attends the sick in putrid diseases orders the room to be ventilated, washed with vinegar, or fumigated with aromatics; and what are all these but so many methods of applying antiseptics externally? I am persuaded that if we had reasoned fairly upon them they would have served as so many leading hints to have discovered that a human body may be sweetened and recovered from putrefaction by being bathed in antiseptics as well as a part of any other animal." Though rejecting the animalcular theory Alexander plainly recognises that putrid diseases are caused by what he calls "putrid particles," and he argues that evacuants are useless as a means of treatment. "Were we to proceed entirely by the evacuatory method, so long as we left one particle it would still be an infected one."

LIFE INSURANCE IN INDIA.

WE have received a copy of a paper read before the Life Assurance Medical Officers' Association on behalf of Dr. Adrian Caddy, surgeon to the Hindu Marwari Hospital, Calcutta, on life insurance in India. Some interesting points are brought forward which indicate the differences between those individuals presenting themselves for examination for life insurance in this country and those who are examined in India. In regard to the native lives Dr. Caddy finds that the native is usually a shorter man than the European, that height for height the native weighs the same on an average as the European, and that there is no evidence to show that his tissues are any lighter than those of a European. The native is very subject to glycosuria, due probably to his carbohydrate diet; he is also liable to develop hydrocele, but the reason for this is not evident. Dr. Caddy is of opinion that opium and hemp drugs are not commonly consumed by the insuring classes. With regard to Europeans, Dr. Caddy offers some interesting suggestions, but he points out that they are the results of his own inquiries, and must only be taken as such. He maintains that Europeans do not acclimatise in the tropics, and submits as a proof of this statement the inability to withstand the tropical sun without any head covering, and after years of residence in hot climates there seems to be a greater liability to sunstroke than on arrival. He further contends that the children of Europeans who have been sent "home" when 4 or 5 years old for their education are generally not so fine physically as their parents, owing to the debilitating influence on their constitutions of the tropical climate at an important growing period of their lives. He also thinks that it is a mistake for parents who have lived in India to send their children when grown up to that country to earn their livelihood; this, however, is very commonly done, but Dr. Caddy believes that it leads to physical degeneration. All these are points which would have an important bearing in arriving at conclusions as regards the rating to be advised on candidates presenting themselves for examination for life assurance. But little, we believe, has been written on life assurance in India, and therefore Dr. Caddy's remarks are particularly worthy of attention.

FOUR lectures on Sleeping Sickness will be delivered at the City of London School, Victoria Embankment, by Dr. F. M. Sandwith, Gresham professor of physic, on Tuesday, Wednesday, Thursday, and Friday, Feb. 13th–16th, at 6 P.M. The lectures are free to the public.

THE ORIGIN AND WHOLESOMENESS OF THE SALINE WATERS IN THE LONDON BASIN.

BY JOHN C. THRESH, M.D. VICT., D.Sc. LOND.,
MEDICAL OFFICER OF HEALTH, ESSEX COUNTY COUNCIL; LECTURER ON PUBLIC HEALTH, LONDON HOSPITAL MEDICAL COLLEGE.

THE waters derived from the chalk and Thanet sands under south-eastern Essex, London, and other places are characterised by their great softness and by the presence of considerable quantities of sodium chloride, sodium sulphate, and sodium carbonate. The proportions of these salts vary considerably, and in some cases, as, for example, near the coast from Harwich down to Foulness Island, and near the Thames at Barking, the Isle of Dogs, &c., the water shows undoubtedly the effect of tidal water infiltration. For years past I have been engaged in investigating the origin of the saline constituents of these potable waters and in plotting the various sources on the map and tracing the chalk water from the north-west of Essex and the very saline and brackish water from the north-east. I surmised that these waters mingled in their course south towards London, and that in some way, whilst travelling, the lime salts disappeared and were replaced by soda salts. This is not the place to record my experiments, but the results are simple and conclusive. The alkaline saline London Basin water is a mixture of chalk water with a small quantity of sea water, which by filtration through the Thanet sand undergoes a marvellous change. This change can be effected in the laboratory, but to completely remove all the lime salts in a short time it is first necessary to treat the sand either with dilute acid or with brine. After either treatment mere filtration of a mixture of sea water and chalk water converts it into a water typical of that in the London Basin. One such result may be recorded as an example, and the mixture contained, purposely, an excessive quantity of sea water. As a typical chalk water, that from the water-works at Halstead on the north border of the chalk outcrop was selected, and this was mixed with 3 per cent. of sea water from Clacton-on-Sea. A portion was analysed and the remainder simply filtered through six inches of Thanet sand which had been washed with brine and then with distilled water. The filtrate was collected and examined.

Analysis of Mixed Chalk Water and Sea Water.
(In parts per 100,000.)

	Before filtration through Thanet sand.	After filtration.
Total hardness	50·0 deg.	0·5 deg.
Free ammonia	0·002	0·105
Organic ammonia	0·004	0·009
Calcium carbonate	25·25	1·0
Magnesium carbonate ...	2·45	0·0
Magnesium sulphate	12·30	0·0
Magnesium chloride	6·65	0·0
Sodium carbonate	0·0	31·85
Sodium sulphate...	0·0	16·30
Sodium chloride...	113·1	126·2
Silica, &c.	1·35	2·65
Total solids...	161·10	178·0

Using smaller quantities of sea water, it is possible to produce waters practically identical with the water from any deep well in the London Basin.

To make the proof conclusive it was argued that if these salts came from sea water they would be associated with bromides found in all tidal waters. This proved to be the case and led to an interesting investigation, not yet completed, on the detection of various compounds of iodine and bromine in sea water and other saline waters. Here it is sufficient to state that when proper precautions are taken bromides can be detected in all these waters, and iodides have been detected in those specially examined for that purpose. The quantity found, however, is exceedingly minute and most easily overlooked. Incidentally the source of the ammonia found in these deep well waters is also demonstrated. It is produced by the reduction of nitrates by the ferruginous sand.

Of the wholesomeness of such of these waters as are used for public supplies at Southend, Colchester, Witham, Chelmsford, and other places there appears to be no doubt, but near the coast in certain parts of Essex the only deep well water obtainable resembles that the analysis of which is given above, and which contains 70 grains and upwards of common salt per gallon. So far these waters have only been used for supplying farms or a few cottages, and when such a water has been obtained in boring to obtain a public supply it has been unhesitatingly condemned as being unsuitable for the purpose. Fifty grains of salt to a gallon of water imparts a saline taste perceptible to many people, and when the amount is increased to 70 grains everyone can detect it. The comparatively few people I have been able to interrogate acknowledge that at first they would not have used the water for drinking purposes if they could have obtained any other, but that they soon became accustomed to it and like it, and have never experienced any ill-effect which could be attributed to its use.

The subject has recently assumed greater importance since it is now proposed to utilise such a saline water as a supply for a population of several thousands. I have suggested mixing it with an equal volume of spring water or subsoil water, but unfortunately a sufficient quantity of a sufficiently good water does not appear to be available for the purpose. The water in question contains about 85 grains of salt per gallon, so that assuming each person drinks three pints per diem, each would imbibe 31 grains of salt. Many wild and random statements are made about the injurious effects of salt, but no proof seems to be adduced that its continued use in moderate quantities has produced illness of any kind. In Essex thousands of people are entirely dependent upon supplies containing 55 grains of salt per gallon, and these localities are about the healthiest in the county. Will the additional 30 grains per gallon be deleterious? Or, in other words, if water containing 21 grains of salt in the three pints drunk daily is perfectly wholesome, is it likely that a water containing 31 grains in the same quantity will be unwholesome? My opinion is that the water is quite wholesome and that after the inhabitants have become accustomed to its use no objection will be found in it.

Deep well waters derived from the Thanet sands or chalk beneath the greater part of London only contain 8 to 26 grains of salt per gallon, with a correspondingly smaller quantity of sodium carbonate and sulphate, and are very pure, palatable, soft, and well adapted for all domestic and most manufacturing purposes. Bacteriologically they are not invariably so pure as would be expected from such a deep source, but as it is practically impossible for dangerous pollution to occur the bacterial contents can usually be disregarded. A recent experience, however, shows that pollution is possible. When investigating the cause of the bacterial pollution of such a well I discovered that a similar well a few hundred yards away had been converted into a kind of cesspool, and that polluting matter had been poured into it for years. However, at the time of my investigation the well had been filled in and the polluting matter carried by a drain into the public sewer. The experience has, however, impressed upon me the necessity for making very careful investigations before asserting that pollution is impossible.

London Hospital Medical College, E.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on Jan. 26th, Sir THOMAS BARLOW, Bart., K.C.V.O., President, being in the chair.

The PRESIDENT referred to the great loss the profession had sustained by the death of Sir Henry T. Butlin, formerly President of the Royal College of Surgeons of England, and it was resolved that a letter of sympathy should be sent from the College to Lady Butlin.

The following gentlemen having passed the required examination were admitted Members of the College:—Charles Hubert Bond, M.D. Edin., Alfred Joseph Clark, M.B. Camb., L.R.C.P., Georg Dorner, M.D. Königsberg, L.R.C.P., William Johnson, M.D. Lond., L.R.C.P., Indarjit Singh, M.B. Camb., I.M.S., and Charles Wilfred Vining, M.D. Lond.

Licences to practise were granted to 92 gentlemen who had passed the necessary examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following gentlemen: Arthur George Atkinson, Robert Vickers Clayton, Francis Gerard Hamilton Cooke, Maneckjee Merwanjee Cowasjee, Frank Elton Cox, George Henry Dupont, Josephine Letitia Denny Fairfield (under the Medical Act, 1876), William Miller Fairlie, William Robert Gibson, John Andrew Hagerty, George Crichton Jackson, Satyaranjan Maitra, Mammatha Nath Mitra, John George Owen, Henry Christian Ernest Quin, Jessie Annie Scott (under the Medical Act, 1876), Frederick Meadows Turner, and Arthur Christopher Watkin.

A Diploma in Tropical Medicine was granted jointly with the Royal College of Surgeons of England to James Bruce-Bays.

The following communications were received:—1. From the secretary of the Royal College of Surgeons of England, reporting proceedings of the Council of that College on Nov. 9th, Dec. 14th, and Jan. 11th last. 2. From Mr. C. S. Jackson, informing the College that the late Dr. Hughlings Jackson bequeathed a portrait of himself to the College. 3. From Mr. Frank Glover, offering to the College a gold pencil case, formerly the property of Sir Henry Halford, Bart., President of the College. 4. From Mr. Ernest M. Wilks, informing the College that the late Sir Samuel Wilks, Bart., bequeathed to the College a portrait of himself and a gold cup. The above gifts were accepted, and the thanks of the College ordered to be returned to the writers of the letters. 5. From the Doctors' Wives Defence Movement concerning certain effects of the Insurance Act. 6. From Dr. James Kerr Love, on behalf of the National Bureau for Promoting the Welfare of the Deaf, concerning the delivery of proposed lectures. The matter was referred to the Censors' Board.

The PRESIDENT announced that he had nominated Sir James F. Goodhart to be the Harveian orator for this year, and Dr. D. B. Lees to be the Bradshaw lecturer, and that the Council had appointed Captain R. McCarrison, I.M.S., to be the Milroy lecturer for 1913. The President also announced that he had nominated Dr. Frederick T. Roberts to be the representative of the College on the governing body of the University of Wales. Dr. W. Collier, Dr. F. W. Mott, Dr. H. P. Hawkins, and Dr. H. D. Rolleston were elected councillors.

Sir Francis Champneys was re-elected a representative of the College on the Central Midwives Board; Sir Dyce Duckworth was re-elected a representative on the governing body of the University of Liverpool; and Dr. Samuel West was appointed a representative of the College on the court of governors of the University of Birmingham.

Certain addenda were made to the scheme of the new examinations in psychological medicine, the chief of which was to the effect that the appointment of examiners should be made by the Censors' Board.

A report was received and adopted from the Committee of Management dated Dec. 5th, 1911. The committee recommended that the following institutions should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics: Royal Dental Hospital, London, and Mill Hill School. The committee also recommended that Rhodes University College,

Grahamstown, South Africa, should be added to the list of institutions recognised by the board for instruction in chemistry, physics, and biology.

It was resolved that a committee of the College should be formed to watch the interests of the Licentiates of the College under the provisions of the Insurance Act, with power to confer with any other body established for similar purposes should the committee see fit to do so.

A debate then followed upon the invitation of the National Insurance Commissioners to the College to send representatives to the conference to be held to-day (Friday, Feb. 2nd), in the course of which the President adjourned the Comitia until Tuesday, Jan. 30th.

The adjourned Comitia was held on Tuesday, Jan. 30th, Sir THOMAS BARLOW, K.C.V.O., the President, being in the chair.

A report was received from the Representative of the College on the General Medical Council, on the proceedings of the Council during its session in November last.

After some formal business had been transacted the College proceeded to discuss a letter which had been received from the National Health Insurance Commission. The letter was as follows:—

National Health Insurance Commission,
Whitehall, London, S.W.,
24th January, 1912.

SIR,—The National Health Insurance Commissioners have decided, for their assistance in bringing the Insurance Act into operation, to take the earliest opportunity of personally conferring with representatives, widely selected, of the chief sections of the community specially concerned. Conferences with representatives of prospective insured persons have already taken place, and it is considered that the time has now arrived when it would be of material assistance to the Commissioners to obtain, in a conference, suggestions from representatives of the medical profession on certain important questions of procedure preliminary to bringing the Act into operation.

The National Health Insurance Joint Committee and the Insurance Commissioners for England, Scotland, and Wales respectively, propose accordingly to hold a Conference on Friday, Feb. 2nd, with representatives of the medical profession; and the Royal College of Physicians in London is invited to appoint two members to attend the Conference, which will be held at 3 P.M. A further communication will be addressed to you as to the place of meeting. A similar invitation is being addressed to the General Medical Council, the British Medical Association, and to other medical bodies.

The point which it is specially desired to discuss relates to the selection of the medical members of the Advisory Committee by whom the Commissioners must be advised in the framing of regulations in accordance with Section 58 of the Act[1]; and the Commissioners will also be glad to hear the views of those present on other matters of procedure in bringing the Act into operation which the representatives of the medical bodies may desire to bring forward.

I am, Sir, your obedient servant,
R. W. HARRIS,
Assistant Secretary of the Joint Committee.

The Secretary, Royal College of Physicians in London.

The following motion was proposed and seconded:—

That in view of the letter from the Insurance Commissioners the College should proceed to appoint Representatives to place before the Commissioners the resolutions of the College respecting the Insurance Bill, in so far as these resolutions may not have been incorporated in the Insurance Act.

To this an amendment was proposed and seconded as follows:—

That in view of the letter from the Insurance Commissioners the College should proceed to consider the invitation of the National Insurance Commissioners to confer with them on the methods of putting the Act into operation.

This was carried by a large majority, and thus became the substantive motion, and carried.

The following series of suggestions were then put and approved of:—

1. That the Insurance Act, as it stands, or even after any modification in it which the Act empowers the Insurance Commissioners to make, is not adapted to secure the benefits "of insurance against loss of health and the prevention and cure of sickness" which are its stated purpose to provide; and that the coöperation of the medical profession in carrying out the operations of the Act is not possible under the Act or under any modifications of it empowered to the Commissioners without inflicting grave injury on the profession.

Therefore:—

2. The College, while desirous of doing all in its power to promote the objects of the Act in reference to the health of the community, is not prepared to accept the invitation of the National Health Insurance Commissioners to the conference on Feb. 2nd for the purposes therein stated of "Selection of Medical Members of the Advisory Committee and" for other matters of procedure in bringing the Act into operation.

3. That the College would be happy to promote an amending Act by which the interests of the public health would be promoted and the interests of the medical practitioners and medical science be safeguarded.

The following motion was then proposed and seconded:—

That the President be requested, with the assistance of such Fellows as he may nominate, to draw up and send a reply to the invitation of the Joint Commissioners in accordance with, and giving the substance of, these resolutions.

To this an amendment was proposed and seconded as follows:—

That the College accept the invitation to discuss the election of medical members of the Advisory Committee, but is not at present in a position to discuss with the Commissioners any other matters of procedure in bringing the Act into operation.

This amendment was lost by a large majority, and the original motion being put was carried.

The PRESIDENT then dissolved the Comitia.

[1] Section 58 of the Act is as follows: "The Insurance Commissioners shall, as soon as may be after the passing of this Act appoint an Advisory Committee for the purpose of giving the Insurance Commissioners advice and assistance in connexion with the making and altering of regulations under this part of this Act, consisting of representatives of associations of employers and approved societies, of duly qualified medical practitioners who have personal experience of general practice, and of such other persons as the Commissioners may appoint, of whom two at least shall be women."

BRITISH MEDICAL BENEVOLENT FUND.

AT the January meeting of the committee 14 cases were considered and grants amounting to £86 made to 11 of the applicants. Appended is an abstract of the cases assisted:—

Daughter, aged 44, of late M.R.C.S. No income, and has been unable to earn a living for some years on account of increasing deafness. Finds she can hear with an instrument recommended by an aural surgeon and asks for assistance to purchase it. Voted £5.

M.B., C.M. Edin., aged 57. Has a small practice in Hampshire, but finds great difficulty in obtaining his fees and asks for a little help. Voted £5.

Widow, aged 41, of M.B., C.M. Edin. Quite unprovided for at husband's recent death after a long illness, and has four young children, the eldest only being 5 years old. Voted £10.

Daughter, aged 57, of late M.R.C.S. Is most willing and anxious to work, but has broken down in health and been obliged to give up a situation as companion. Relieved once, £12. Voted £12.

Daughter, aged 74, of late M.R.C.S. Supplements an income of a few shillings a week by needlework, but is unable to earn as much as formerly on account of rheumatism and failing eyesight. Relieved 13 times, £125. Voted £12.

Daughter, aged 59, of late M.R.C.S. Has supported herself for more than 30 years as governess, school matron, &c., but is now unable to obtain a suitable post. Relieved five times, £60. Voted £12.

Widow, aged 56, of M.R.C.S. No income; no children; and unable to maintain herself on account of ill-health. Relieved eight times, £80. Voted £2, and case to be reconsidered.

Widow, aged 60, of L.R.C.P., L.R.C.S. Irel. No income, and is practically incapacitated by the loss of her right hand. Children unable to help. Relieved eight times, £68. Voted £12.

M.D. Aberd., aged 59. Used to have a fair practice in a Midland town, but has been incapacitated for several years by spastic paralysis, and is entirely dependent on pensions obtained from charitable societies. Three children, the eldest only 13 years old. Relieved three times, £33. Voted £5.

Widow, aged 68, of M.D. Edin. Supplements a small weekly allowance from relations by taking a boarder, and asks for a little help to meet unavoidable expenses. Relieved twice, £12. Voted £6.

Daughter, aged 50, of late F.R.C.S. Has supported herself as a companion, but at present has no post and is not in very good health. Relieved six times, £35. Voted £5.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8745 births and 5559 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 15·3, 15·4, and 14·8 per 1000 in the three preceding weeks, rose to 16·5 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual rate of mortality in these large towns averaged 15·5 per 1000, while in London during the same period the average annual death-rate did not exceed 15·0 per 1000. The annual death-rates in the several towns last week ranged from 6·2 in Edmonton, 7·8 in Eastbourne, 8·5 in Hornsey, 9·6 in Grimsby, and 10·1 in Southend-on-Sea, to 23·1 in Newport (Mon.), 24·3 in West Bromwich, 25·3 in Merthyr Tydfil, 29·8 in Walsall, and 31·5 in Dudley.

The 5559 deaths from all causes in the 94 towns were 580 in excess of the number in the previous week, and included

311 which were referred to the principal epidemic diseases, against 323 and 297 in the two preceding weeks. These 311 deaths from the principal epidemic diseases included 94 from whooping-cough, 72 from measles, 53 from diphtheria, 47 from infantile diarrhœal diseases, 26 from scarlet fever, and 19 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week did not exceed 0·9 per 1000, and was equal to the average rate in the three preceding weeks. The deaths attributed to whooping-cough, which had been 78, 88, and 81 in the three preceding weeks, rose to 94 last week, and caused the highest annual death-rates of 1·3 in Gateshead, 1·4 in Coventry, 1·5 in Tottenham and in West Bromwich, 1·7 in Walsall, 1·8 in Swansea, and 2·5 in Merthyr Tydfil. The deaths referred to measles, which had declined from 83 to 64 in the three preceding weeks, rose to 72 last week; the highest death-rates from this disease were 1·3 in Wallasey and in Swansea, 1·8 in Oldham, and 2·1 in Warrington. The fatal cases of diphtheria, which had been 49, 69, and 60 in the three preceding weeks, declined to 53 last week, and included 18 in London and its 14 suburban districts, 5 in Leeds, and 3 in Liverpool. The deaths attributed to infantile diarrhœal diseases, which had averaged 57 in the three preceding weeks, declined to 47 last week, of which 17 were registered in London, 4 in Birmingham, and 3 in Newcastle-on-Tyne. The deaths referred to scarlet fever, which had been 19 in each of the two previous weeks, rose last week to 26, and included 4 in Leeds, 3 in London, and 2 each in Birmingham, Liverpool, and Middlesbrough. The fatal cases of enteric fever, which had been 24, 20, and 17 in the three preceding weeks, were 19 last week; 4 deaths were registered in Sheffield, 3 in London, 2 in Stoke-on-Trent, and 2 in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily decreased from 2213 to 1654 in the ten preceding weeks, had further declined to 1562 on Saturday last; 158 new cases of this disease were admitted to these institutions during the week, against 193, 165, and 162 in the three preceding weeks. These hospitals also contained on Saturday last 1209 cases of diphtheria, 328 of whooping-cough, 116 of measles, and 50 of enteric fever, but not one of small-pox. The 1376 deaths from all causes recorded in London were 159 in excess of the number in the previous week, and were equal to an annual death-rate of 15·9 per 1000. The deaths referred to diseases of the respiratory system, which had been 290 and 303 in the two preceding weeks, further rose to 333 in the week under notice, but were 41 below the number registered in the corresponding week of last year.

Of the 5559 deaths in the 94 large towns last week, 190 were referred to different forms of violence, and 470 were the subject of coroners' inquests. The causes of 61, or 1·1 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Nottingham, Portsmouth, and in 63 other smaller towns. The 61 uncertified causes of death last week included 10 in Birmingham, 10 in Liverpool, 5 in Stoke-on-Trent, and 4 each in London, in Dudley, and in Manchester.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1108 births and 740 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 18·7 and 17·7 per 1000 in the two preceding weeks, rose to 17·3 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual rate of mortality in these Scotch towns averaged 17·7 per 1000, and was 2·2 per 1000 above that recorded in the 94 large English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 7·6 in Falkirk, 9·9 in Partick, and 10·0 in Motherwell, to 20·4 in Glasgow, 28·2 in Greenock, and 31·1 in Ayr.

The 740 deaths from all causes in the 18 Scotch towns were 15 in excess of the number in the previous week, and included 89 which were referred to the principal epidemic diseases, against 82 and 103 in the two preceding weeks. Of these 89 deaths, 39 resulted from measles, 18 from whooping-cough, 13 from diphtheria, 11 from infantile diarrhœal diseases, 4 from scarlet fever, and 4 from enteric fever, but not one from small-pox. These 89 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·1 per 1000, or 1·2 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had increased from 34 to 56 in the three preceding weeks, declined to 39 last week, of which 22 were recorded in Glasgow, 6 in Edinburgh, and 3 in Aberdeen. The 18 deaths referred to whooping-cough were equal to the number in the previous week, and included 8 in Glasgow, 3 in Ayr, and 2 in Aberdeen. The fatal cases of diphtheria, which had been 10 in each of the two preceding weeks, rose to 13 last week; 6 deaths occurred in Glasgow, 2 in Edinburgh, and 2 in Ayr. The 11 deaths attributed to infantile diarrhœal diseases were two in excess of the average in the three preceding weeks, and included 5 in Glasgow, 2 in Dundee, and 2 in Hamilton. The deaths referred to scarlet fever, which had been 11, 6, and 6 in the three preceding weeks, further declined to 4 last week, 2 of which were registered in Aberdeen. Of the 4 fatal cases of enteric fever, which were equal to the number in the preceding week, 3 were recorded in Glasgow and 1 in Greenock.

The deaths referred to diseases of the respiratory system, which had been 147 and 120 in the two preceding weeks, rose to 133 last week; and 24 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 602 births and 495 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had increased from 18·0 to 21·8 per 1000 in the four preceding weeks, further rose to 22·3 per 1000 in the week under review. During the first four weeks of the current quarter the mean annual death-rate in the 22 Irish towns averaged 20·8 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 15·5, while in the 18 Scotch towns it was equal to 17·7 per 1000. The annual death-rates last week in the several Irish towns were equal to 23·5 in Dublin (against 15·9 in London), 27·5 in Belfast, 26·5 in Cork, 15·3 in Londonderry, 16·3 in Limerick, and 13·3 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week did not exceed 10·7 per 1000.

The 495 deaths from all causes in the 22 Irish towns were 12 in excess of the number in the previous week, and included 30 which were referred to the principal epidemic diseases, against 28 and 41 in the two preceding weeks; of these 30 deaths, 15 resulted from whooping-cough, 5 from diarrhœal diseases, 3 from measles, 3 from scarlet fever, 3 from diphtheria, and 1 from enteric fever, but not one from small-pox. These 30 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·4 per 1000; the death-rate from these diseases did not exceed 0·9 in the 94 English towns, while in the 18 Scotch towns it was equal to 2·1 per 1000. The deaths attributed to whooping-cough, which had increased from 4 to 19 in the three preceding weeks, fell to 15 last week, and comprised 12 in Belfast and 3 in Dublin. The deaths referred to diarrhœal diseases, which had been 4 and 11 in the two preceding weeks, declined last week to 5, all of which related to infants under two years of age. The 3 fatal cases of diphtheria were equal to the average in the two preceding weeks. The 3 deaths attributed to scarlet fever were equal to the average in the three preceding weeks, and included 2 in Dublin and 1 in Belfast. The 3 fatal cases of measles were registered in Dublin, and that of enteric fever in Belfast.

The deaths referred to diseases of the respiratory system, which had steadily increased from 83 to 111 in the five preceding weeks, further rose to 152 last week. Of the 495 deaths from all causes in the 22 Irish towns, 126, or 25 per cent., were recorded in public institutions, and 9 were attributed to different forms of violence. The causes of 15, or 3·0 per cent., of the total deaths in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 1·1 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Frederick S. Heuston, C.M.G., is placed on retired pay (dated Jan. 22nd, 1912).

The undermentioned Majors to be Lieutenant-Colonels:—Stephen F. Clark, vice T. W. O'H. Hamilton, C.M.G., retired (dated Nov. 4th, 1911); Edward M. Hassard, vice W. W. Pike, D.S.O., promoted (dated Nov. 9th, 1911); Brevet Lieutenant-Colonel Sir William B. Leishman, F.R.S., vice J. M. Irwin, promoted (dated Dec. 11th, 1911); James Thomson, vice Sir W. B. Leishman, F.R.S., supernumerary (dated Dec. 11th, 1911); Gerald T. Rawnsley, vice F. S. Heuston, C.M.G., retired (dated Jan. 22nd, 1912); and Brevet Lieutenant-Colonel Alfred P. Blenkinsop, vice G. T. Rawnsley, supernumerary (dated Jan. 22nd, 1912).

Captain Carlisle Kelly is placed temporarily on the half-pay list on account of ill-health (dated Jan. 5th, 1912).

Lieutenant Thomas A. Weston, from the seconded list, is restored to the establishment (dated Dec. 1st, 1911).

Colonel W. G. A. Bedford, C.M.G., principal medical officer, South China, has taken up duty as Principal Medical Officer of the London District, rendered vacant by the retirement of Colonel A. Peterkin. Brevet-Colonel R. H. Firth, sanitary officer, Army Headquarters, Simla, has been appointed an Honorary Surgeon to His Excellency the Viceroy. Lieutenant-Colonel R. L. R Macleod has been posted to Devonport in charge of the Military Hospital and appointed Senior Medical Officer of the South-Western Coast Defences. Lieutenant-Colonel J. J. C. Donnett has taken up duty in the Straits Settlements as Senior Medical Officer. Lieutenant-Colonel J. M. F. Shine has been appointed Senior Medical Officer at Jersey, in succession to Lieutenant-Colonel F. P. Nichols, who has been appointed as Medical Officer in Charge at Bodmin. Lieutenant-Colonel C. T. Blackwell has been appointed to command the Station Hospital at Rangoon. Lieutenant-Colonel C. A. Lane has been placed under orders to embark for a tour of service in India.

Major T. E. Fielding has taken up duty in the London District. Major H. S. Roche, adjutant of the Royal Army Medical School of Instruction at Leeds, has been posted for duty at Lincoln. Major H. W. Grattan has been posted to Benares. Major A. Chopping has been posted to the Eastern Command on return from India. Major H. H. Norman has been appointed for duty at Kasauli. Major A. C. Fox, on return from North China, has been posted to the Dublin District. Major A. G. Thompson has been selected for appointment to command the Station Hospital at Pachmarhi, with effect from March 1st next. Major J. McD. McCarthy has taken up duty as Specialist Sanitary Officer to the Second (Rawal Pindi) Division. Major J. G. McNaught has been appointed to the Aldershot Command. Major G. H. Goddard has taken over charge of the Helena Hospital for Women and Children at Shorncliffe, in succession to Major S. H. Fairrie. Major L. P. More has been posted for duty with the Ninth (Secunderabad) Division.

Captain T. S. Blackwell has been appointed to the Medical Charge of the 1st Battalion, Royal Irish Rifles, during the movement of this regiment from Maymyo, Burma, to Kamptee. Captain V. T. Carruthers has joined the Cork District. Captain W. Egan has been granted eight months' general leave of absence home from India, at the termination of which he will revert for duty on the home establishment. Captain R. L. Argles has been appointed to the Medical Charge of the 23rd Fortress Company of the 3rd Sappers and Miners, stationed at Aden, in succession to Captain A. D. O'Carroll. Captain W. C. Smales, in charge of the Cantonment General Hospital at Poona, has been granted eight months' leave of absence home from India. Captain A. D. Jameson, from Aldershot, has taken up duty as Specialist in Dermatology and Venereal Diseases at the Station Hospital, Meerut. Captain J. Mackenzie has been transferred from Pirbright to the London District. Captain F. W. W. Dawson has left Dublin for a tour of duty in India. Captain H. C. Winckworth has been transferred from the Aldershot Command to the Woolwich District for duty at the Royal Herbert Hospital. Captain J. H. Graham, on return from Gibraltar, has been posted to Kilworth Camp. Captain F. A. McCammon has joined the Station Hospital at Poona for duty. Captain G. E. Ferguson has been appointed to Winchester. Captain J. L. Jones has been posted to the Eighth (Lucknow) Division for duty with the Southern Army. Captain H. Rogers has been detailed for a tour of service at Malta. Captain A. H. Heslop has been appointed for duty on board the transport s.s. *Rohilla*, which left Karachi for Southampton on Jan. 31st.

Lieutenant J. A. Manifold has been placed under orders for a tour of service in Bermuda. Lieutenant A. S. M. Winder, from the Curragh, has joined the Station Hospital at Lucknow. Lieutenant J. Gilmour, Devonport, has been appointed to the Military Hospital at Cosham.

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of the following officers of the Indian Medical Service:—Captains to be Majors (dated July 27th, 1911): Francis Victor Owen Beit and Matthew Corry. Lieutenants to be Captains (dated August 1st, 1911): Reginald Broughton Lloyd, Hugh Stott, and Gerald Lewis Colhoun Little.

The King has also approved of the retirement of Lieutenant-Colonel Charles Henry Bedford (dated Dec. 18th, 1911).

Lieutenant-Colonel T. W. Irvine has been selected to officiate as Agency Surgeon, First Class and Chief Medical Officer in the North-Western Frontier Province during the absence on leave of Lieutenant-Colonel W. R. Edwards, C.M.G. Lieutenant-Colonel H. B. Melville has taken over Medical Charge of the Army Headquarters Staff and Establishments during the absence of Captain A. E. Lister, surgeon to H.E. the Commander-in-Chief. Lieutenant-Colonel J. Penny has been granted an extension of his leave of absence home from India on the recommendation of a medical board.

The services of Major V. Robertson have been placed at the disposal of the Home Department of the Government of India. Major C. Hudson, D.S.O., has been granted 18 months' leave of absence home from India. Major T. B. Kelly has been appointed Specialist in Ophthalmology to the Burma Division. The services of Major H. M. Mackenzie have been placed temporarily at the disposal of the Government of the Punjab. Major R. Brysom has been appointed District Medical and Sanitary Officer at Tinnevelly, and in Medical Charge of the District Jail, Palamcottah, Madras Presidency. Major W. H. Kerrick has arrived home on leave of absence from India. Major A. F. Stevens, civil surgeon at Hazaribagh, has taken up duty as an Officiating Civil Surgeon of the first class during the absence on leave of Lieutenant-Colonel F. C. Clarkson.

Captain W. M. Houston has been appointed Medical Officer, Kathiawar Political Agency, and in charge of the West Hospital at Rajkot. Captain W. C. Long has arrived home on leave of absence from Madras Presidency. Captain M. R. C. MacWatters has been granted furlough for one year. Captain W. D. A. Keys has been appointed Civil Surgeon at Karwar. Captain J. E. Clements has been selected to officiate as Superintendent of the Central Jail at Fategarh during the absence on leave of Lieutenant-Colonel E. Jennings. Captain B. B. Paymaster has been granted leave, combined with furlough, for a total period of two years. Captain W. P. G. Williams has been appointed to officiate as Superintendent of the Central Jail at Bareilly during the absence on leave of Major C. B. Prall. Captain J. Smalley has been appointed to officiate as Civil Surgeon at Dhulia, in succession to Major G. E. Stewart, who has been transferred. The services of Captain C. C. Shaw have been placed temporarily at the disposal of the Chief Commissioner of the Central Provinces. Captain C. E. Bulteel has arrived home on leave of absence from India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant D'Arcy Power is confirmed in his rank. John William Gray to be Lieutenant (on probation) (dated Dec. 27th, 1911).

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned gentlemen have been appointed Surgeons (dated Jan. 26th, 1912):—Alfred Ernest Wilson Hird, Alfred Edward Turnbull, Edmund Ralph Sircom, Francis Carminow Doble, Walter Fedde Fedden, James Bruce Ronaldson, Joseph Henry Thompson, William Innes Gerrard, Cecil Brian Forsyth Tivy, and Charles O'Beirne Ryan.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Highland Mounted Brigade Field Ambulance, Royal

Army Medical Corps: Lachlan Martin Victor Mitchell to be Lieutenant (dated Jan. 27th, 1912).

1st East Anglian Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains: Lieutenant Ernest V. Gostling (dated Nov. 6th, 1911) and Lieutenant Gerald M. Hetherington (dated Dec. 23rd, 1911).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Bernard Richardson Billings, from the List of Officers of the Royal Army Medical Corps attached to Units other than Medical Units, to be Lieutenant (dated Jan. 27th, 1912).

2nd West Lancashire Field Ambulance, Royal Army Medical Corps: Lieutenant Owen H. Williams to be Captain (dated Dec. 23rd, 1911).

6th London Field Ambulance, Royal Army Medical Corps: Lieutenant Edward P. Minett is seconded under the conditions of paragraph 114 of the Territorial Force Regulations (dated Jan. 1st, 1912).

1st Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel William F. Somerville resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 27th, 1912). Major George H. Edington to be Lieutenant-Colonel (dated Jan. 27th, 1912).

3rd Wessex Field Ambulance, Royal Army Medical Corps: Lieutenant Frederick E. Stokes to be Captain (dated Nov. 19th, 1911).

4th London General Hospital, Royal Army Medical Corps: Captain Fred. W. Mott to be Major (dated Jan. 27th, 1912).

2nd Southern General Hospital, Royal Army Medical Corps: Captain John Alexander Nixon, from the List of Officers of the Royal Army Medical Corps attached to Units other than Medical Units, to be Captain (dated Jan. 27th, 1912).

4th Southern General Hospital, Royal Army Medical Corps: Lieutenant-Colonel Charles E. R. Rendle resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 27th, 1912).

Attached to Units other than Medical Units.—Lieutenant William J. T. Barker resigns his commission (dated Jan. 27th, 1912).

For Attachment to Units other than Medical Units.—Robert Lowis Routledge to be Lieutenant (dated Nov. 26th, 1911).

Supernumerary for Service with the Officers Training Corps.—The appointment of Lieutenant Henry Stokes (for service with the Royal College of Surgeons in Ireland Contingent, Senior Division, Officers Training Corps) is antedated to April 1st, 1911.

ROYAL ARMY MEDICAL CORPS EXAMINATIONS.

The following is a list of the successful candidates for commissions in the Royal Army Medical Corps at the competition held in London in January, for which 46 candidates entered:—

	Marks.
A. G. Biggam, M.B., Ch.B. Edin., Edinburgh University ...	585
D. T. M. Large, M.B., Ch.B. Edin., Edinburgh University ...	585
W. F. Christie, M.B., Ch.B. Edin., Edinburgh University ...	575
R. K. Mallam, M.B., B.S. Lond., London Hospital	570
W. W. Pratt, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Bristol University	564
*W. B. Stevenson, M.B., B.Ch., B.A.O., Queen's Univ., Belfast, Queen's University, Belfast	544
M. Burnett, M.R.C.S. Eng., L.R.C.P. Lond., St. George's Hospital	543
C. J. Blaikie, M.R.C.S. Eng., L.R.C.P. Lond., St. George's Hospital	540
J. H. M. Frobisher, M.B., B.Ch. Leeds, Leeds University ...	540
C. M. Ingoldby, M.R.C.S. Eng., L.R.C.P. Lond., London Hospital	539
O. W. J. Wynne, L.R.C.P. & S. Irel., Royal Colleges of Physicians and Surgeons of Ireland, University College, London	538
D. T. Richardson, M.B., Ch.B. Edin., Edinburgh University ...	534
E. A. Strachan, M.B., Ch.B. Edin., Edinburgh University ...	533
W. McNaughtan, M.B., Ch.B. Edin., Edinburgh University ...	525
S. J. Higgins, M.R.C.S. Eng., L.R.C.P. Lond., London Hospital and Cambridge University	518
A. Hood, M.B., Ch.B. Edin., Edinburgh University	514
J. L. Ritchie, M.B., Ch.B. Birm., M.R.C.S. Eng., L.R.C.P. Lond., Birmingham University	514
G. A. Blake, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Guy's Hospital	503
H. R. L'Estrange, L.R.C.P. & S. Irel., L.M. Rot., Royal College of Surgeons, Ireland	493
*C. J. H. Little, M.B., Ch.B. Leeds, Leeds University	492

* Awarded service marks under Par. 71 of the Regulations for the Officers Training Corps.

INDIAN MEDICAL SERVICE EXAMINATIONS.

The following is a list of the successful candidates at the recent competition for commissions in His Majesty's Indian Medical Service, which was held at the Royal Army Medical College and at the Examination Hall, Victoria Embankment, on Jan. 22nd–27th:—

	Marks.
Ronald Herbert Candy, M.B., B.S. Lond., L.R.C.P., M.R.C.S., London Hospital	3447
Philip John Veale, M.B., B.S. Lond., Bristol University... ...	3376
Henry Hingston, M.B., B.S. Lond., Westminster Hospital ...	3358
Jamasp Cursetji Bharucha, L.R.C.P., M.R.C.S., London Hospital	3338
Frederick Jasper Anderson, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital	3254
Heerajee Jehangir Manockjee Cursetjee, M.B., B.S. Cantab., L.R.C.P., M.R.C.S., L.M. & S. Bombay, Cambridge University and London Hospital	3191
John Simson Stuart Martin, M.B., Ch.B. Edin., Edinburgh University	3094
Peter Fleming Gow, M.A., M.B., Ch.B., D.P.H. St. And., St. Andrews University...	3093
Robert Victor Morrison, M.B., Ch.B. Edin,, Edinburgh University	3019
Joysh Chandra Dey, M.B. Calcutta, Calcutta Medical College	3006
James Walker Jones, M.B., Ch.B. Glasg., Glasgow University	2992
James Hall Hislop, M.B., Ch.B. Glasg., Glasgow University...	2958

THE ROYAL NAVY LIST.

The Royal Navy List, the 137th quarterly issue of which has just appeared, will appeal to everyone who is interested in naval affairs. To the service and the press it is an indispensable source of reference, while to the public who desire information with regard to the various departments of the Royal Navy—the *personnel*, the ships which form our first line of defence, their names, groupings, and so forth—the book is both valuable and convenient. Compared with the corresponding issue of the List for 1911 the volume is somewhat smaller in bulk, containing only 560 pages, as against 724 last year, but the information which it gives is still characterised by fulness and reliability. In addition to the lists of ships, of officers, and other tabular details, there is a complete history of all the battleships and cruisers of the first and second class, and specially written articles on the "Current History of the Royal Navy" and the "Current History of Foreign Navies," including naval administration and shipbuilding, while there is a chronological list of the notable naval events of the year. One of the most convenient features of the book is the complete alphabetical list of all officers, active and retired, with their services, honours, and special qualifications in the Royal Navy, Royal Marines, Indian Marine, Royal Naval Reserve, Royal Volunteer Reserve, and Australian Naval Defence Forces. The price at which the book is issued—10*s.*—is moderate when the vast amount of information arranged for convenient reference is considered. Messrs. Witherby and Co., of High Holborn and Newman's-court, Cornhill, are the publishers.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, London, W.C., on Jan. 19th. There were present Dr. F. de Havilland Hall (in the chair), Dr. F. C. Martley, Mr. H. P. Symonds, Mr. J. Brindley-James, Dr. G. E. Herman, Dr. W. Knowsley Sibley, Mr. F. S. Edwards, Dr. F. J. Allan, Dr. H. A. Sansom, Dr. F. S. Palmer, and Dr. J. B. Ball. The records of the society in the latter part of 1911 have been very satisfactory, comparing favourably with the same period in past years. As usual, in the winter months the claims increase, but so far the amount of sickness experienced has been well within that provided for in the rates of contribution. The time of the committee was largely taken up in examining the list of those who are at present receiving sick pay and who are to all appearances permanently incapacitated from professional work. The society's reserves are large, now amounting to over a quarter of a million sterling, and a considerable portion of this is specially earmarked for the benefit of these chronic cases. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

Correspondence.

"Audi alteram partem."

FATAL HÆMOPTYSIS IN EARLY LIFE.

To the Editor of THE LANCET.

SIR,—It may interest your readers, in connexion with the cases described by Mr. Carruthers Watt and Dr. Ralph Brown in your issue of to-day and of April 30th, 1910, to refer to a case an account of which I gave to the Pathological Society in May, 1874.[1] It was that of an infant aged 7 months, under my observation at the Brompton Hospital, who had suffered from cough from the preceding Christmas and presented signs of tuberculosis. The cough was spasmodic and attended with a ropy mucous expectoration which had to be removed from the mouth. On April 1st, having had no previous hæmoptysis, the child suddenly expectorated half a pint of dark, partly clotted blood and expired almost immediately. On post-mortem examination the lungs were disseminated with miliary tubercles, and at the base of the left lobe there was a ragged cavity traversed by trabeculæ, some of which contained vessels still patent, and surrounded by tuberculous consolidation. Near the apex of the same lobe there was another smaller cavity of similar characters, across which stretched a vessel one-tenth of an inch in transverse measurement, with thickened walls, but at one point the wall of the vessel was eroded to extreme tenuity and had given way. The vessel was found to be one of the larger branches of the pulmonary artery. Pulmonary tuberculosis is not common at this early period of life, but in this family all the five other children had died in infancy with lung symptoms, the eldest being ten weeks old, and the father was found to be suffering from phthisis.

I believe this to be the first case recorded of fatal hæmoptysis at so early an age, and I classified it as belonging to the third group of the series of cases I had brought before the Pathological Society four years previously.[2] Amongst the 17 cases there recorded the youngest was that of a child aged 14, more fully described by Dr. Symes Thompson in the *Medical Times and Gazette* of May 21st, 1870.

I am, Sir, yours faithfully,

Portland-place, W., Jan. 27th, 1912. R. DOUGLAS POWELL.

THE TREATMENT OF GLAUCOMA.

To the Editor of THE LANCET.

SIR,—I read with great interest the communications by Mr. J. Herbert Parsons and Dr. Leonard Hill to THE LANCET.[3] At the early part of my career I worked for many years at five ophthalmic clinics at the same time—indeed, for ten years. The experience I obtained led me to attach little value to the operative treatment of those cases in which one rarely if ever found increased tension—i.e., tension detectable by palpation. That the blocking of the angle was the determining cause of glaucoma in these cases did not appeal to one's judgment, and especially in view of the fact that some even with *deep cupping* retained their sight for many years under purely drug treatment. At the Ophthalmological Society I have several times emphasised the hypothesis that, given toxins or antitoxins or any such irritant in any amount for a considerable time, tension would result from swelling of the epithelium cells, and especially those lining the canal of Schlemm. So firmly did I believe this to be the case that my treatment for many years has been largely conservative. Not long ago I was called to see a feeble patient with acute glaucoma. In this case medical treatment was tried: (*a*) gutt. eserin. gr. 1 saepe until the pupil contracted; (*b*) a brisk purgative; (*c*) diminution of the supply of fluids; and (*d*) the placing of the patient in the cardiac position, &c. The patient made a perfect recovery and during the last two years under suitable drug treatment has had no further symptoms. Dr. J. Stewart Richards, of Croydon, kindly undertook supervision of the case.

As regards chronic glaucoma with rare attacks of tension and very deep cups—i.e., in precisely the cases in which operation is apt to result in rapid contraction of the field of vision, and in which operative treatment most signally fails—I have had results well worth recording. One case, a myope with advanced glaucoma, deep anterior chambers, and only occasional tension, vision was kept at or about 6/12 with correcting glasses for 15 years. During my holidays she had attacks of fog, for which iridectomy was done by one of the most expert operators in London, with the result that in a few months she was quite blind. In a second case, a lady with very deep cups was advised by an eminent oculist, to whom I sent the case for an opinion, to submit to an immediate operation. I saw her a few days ago. Vision in the right eye is 6/18 and in the left 6/12 good and 6/9? The field in the right eye is badly contracted on the nasal side but good in the left eye. It is now 20 years since my eminent *confrère* recommended immediate operation.

Another interesting case which tends to bear out Dr. Leonard Hill's teaching was that of a man with subacute glaucoma and cloudy cornea. On this man I performed an iridectomy on the worse eye, but it resulted in no benefit whatever. I accordingly induced a friend, who very deservedly enjoys a great reputation for operative skill, to see him. He inspected my iridectomy wound very carefully and declined to operate on the other eye which was similarly affected. As treatment seemed useless—i.e., the treatment by eserine—and the man persistently came to my out-patients despite all efforts to discourage him, I determined to put him on active mercurial treatment. The result was an apparent cure, and he retained his sight in the unoperated eye for about nine years—indeed, until the time of his death. Of course, I have lost scores since then, but these cases show the necessity of taking Dr. Leonard Hill's teaching very seriously. My own conviction is that iridectomy for chronic glaucoma should never be relied on without attention to certain details which will appear lower down. As regards the newer operations, I incline most to that of Major Herbert on the ground that, despite his belief, sections recently made prove that filtration can take place through the new tissue. There is an even greater probability of success if we can delay healing in such a way as to produce a permanent fistula, which seems by no means an impossibility if time is allowed for epithelium to grow up along the track of the knife. To estimate these operations in glaucoma, such as I have referred to, it is idle to suppose they have been successful on the ground the vision and fields remain stationary for merely a year or two.

The treatment I now follow is to show the patient the kind of halo seen in glaucoma, and instruct him to look for it at night before retiring (as there is very properly a suspicion that the attacks of tension occur at night), and in the event of there being even a suspicion of such a halo to instil gutt. eserin. gr. 1-8th. The patient is further instructed to sleep in the cardiac position. Very urgently are all glaucoma cases advised not to sleep with the pillow pressing on the great veins of the neck. These injunctions are also given to those suffering from iritis, as in no cases do we see the result of such pressure more acutely felt; indeed, the pressure of the pillow seems to be quite a common cause of the exacerbation of pain at night when in bed. Another precaution one takes is to give a small dose of hydrarg. salt thing at night on the supposition that it may help to restrain the growth of bacteria in the alimentary canal. The bowels are washed out every ten days or so with a brisk saline. My experience of this treatment has been such that one would be reluctant to give it up.

I certainly hope that Dr. Leonard Hill's paper will be widely read, as he undoubtedly gives us a good scientific basis to work upon.

I am, Sir, yours faithfully,

CHAS. WRAY, F.R.C.S. Eng.

Victoria-street, S.W., Jan. 26th, 1912.

To the Editor of THE LANCET.

SIR,—It affords me satisfaction to have obtained from Dr. Leonard Hill a statement of his own opinions on the subject of glaucoma, partly because I could not believe that Dr.

[1] Pathological Transactions, vol. xxv., p. 39.
[2] Ibid., vol. xxii., p. 55.
[3] THE LANCET, Jan. 6th (p. 15) and 27th (p. 226), 1912.

Thomson Henderson's writings gave an adequate expression of those opinions, but chiefly because it is only by enlisting the active interest and coöperation of physiologists that advance in our knowledge of the physiology and pathology of the intra-ocular pressure can be attained. I have so profound a respect for the views of those who are *au fait* with the latest researches in physiology that any criticism of Dr. Hill's remarks which I venture to offer are put forward in the rôle of *advocatus diaboli* rather than that of confirmed antagonist. The statement which Dr. Hill controverts is founded upon the experimental work of Leber, Starling and Henderson, myself, and others. I have always been careful to state that the physical conditions of the formation of lymph "are consistent with" or are "not inconsistent with" its production by a process of filtration, for I have never brought myself to believe that the living endothelial cells which form the walls of the capillaries and the retinal epithelial cells which cover the ciliary processes play a merely passive part in the production of the intra-ocular lymph. Such experimental work as I am familiar with appears to me to support the statement in the terms which I have used, and the deduction that there is a difference in pressure on the two sides of the capillary walls is thus far justified. The bald statement that "there is *no* evidence which demonstrates that there is a hydrostatic difference of pressure on either side of the capillary wall" does not under these circumstances carry conviction. Dr. Hill apparently admits the physical process of filtration in the absorption of lymph, for he says that "each pulsatile expansion in the arteries of the eye helps to drive a little of the aqueous into the efferent veins."

With regard to Martin Fischer's work, it appears to me to be as risky to apply such results obtained upon the excised eye directly to the living eye as it is to make deductions from a mechanical model. We know that an excised frog's muscle will take up water from strong saline solutions against osmotic pressure; it does not follow that the living muscle will behave in the same manner, and in fact it does not. The statement as to the action of sub-conjunctival injections in glaucoma has unfortunately been amply disproved. The suggestion, however, that the swelling of colloids is an important factor in glaucoma opens up a wide field for research, and if any remarks which I have made stimulate physiologists to direct their attention to the subject I shall be well repaid for any errors of which I may have been guilty. I am, Sir, yours faithfully,

J. HERBERT PARSONS.

Queen Anne-street, W., Jan. 29th, 1912.

THE PROPAGATION OF PLAGUE WITHOUT THE AID OF INFECTED RATS.

To the Editor of THE LANCET.

SIR,—I have perused with considerable interest your leading article on this subject in THE LANCET of Dec. 16th, 1911. I beg to forward, under separate cover, a copy of my paper on Plague published in the *American Journal of the Medical Sciences* in September, 1909. I have tried therein to represent the views upon pneumonic plague which are held here, and which have been amply borne out by my clinical experience, now extending over 15 epidemics in this city. Whilst fully agreeing with Dr. R. Farrar as to direct infection in the propagation of pneumonic plague, there are other possible channels of infection that should not be overlooked, as you will find pointed out on p. 14 of my pamphlet. Should the apparent primary pneumonia be but a result of septicæmia, then the intervention of the flea would be necessary, whether the tarabagan or the human flea, I am not prepared to say. The sequence of events would then stand thus: (1) Infected tarabagan; (2) infected flea of same; (3) human infection, with rapid and early septicæmia followed by (4) pneumonia, *apparently* primary, but really secondary to blood infection.

As regards the sputum infecting from secondary pneumonia in a case of bubonic plague, the chances of infection are infinitesimal, though the probability could hardly be denied. The complication is comparatively rare, and the sputum not generally free or abundant. I have not come across any instances of infection in this way throughout my long connexion with the disease.

I am, Sir, yours faithfully,

Bombay, Jan. 6th, 1912. N. H. CHOKSY, M.D.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—My esteemed former house surgeon, Mr. MacIlwaine, credits me with little knowledge of the writings of my revered teacher, Dr. Moxon, and proceeds to contend against conclusions presumed to be in my Bradshaw lecture without apparently having read that address. My argument in reference to the diatheses was that many diseases formerly dogmatically taught to be due to hereditary constitutional causes, such as tubercle, leprosy, malaria, rheumatism, had been proved by modern investigation to be due to the in-roads of micro-organisms, or, to use the terms of our common teacher, had been removed from the intrinsic to the extrinsic class. Nowhere do I deny that disease may not commence from defects in the organisation of any individual. But Mr. MacIlwaine's illustrations are not all well chosen; for nothing is more certain than that attacks of asthma may be caused by the pollen of certain plants and the odours of various animals, and "chronic lunacy" is certainly not always dependent on a constitutional cause, for that form of chronic lunacy which is associated with general paralysis has been most clearly proved to be due to the degenerations caused by the ravages of the spirochæta pallida.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 30th, 1912. R. CLEMENT LUCAS.

ELECTRIC METALLIC COLLOIDS AND THEIR THERAPEUTICAL APPLICATIONS.

To the Editor of THE LANCET.

SIR,—I have read with great interest M. Duhamel's article on the use of metallic colloids in medicine in THE LANCET of Jan. 13th. I was unaware that so much work had been done with this comparatively new therapeutic agent. M. Duhamel is undoubtedly an authority on this development of treatment in clinical medicine, but I think he is not justified in sweeping on one side all colloids of metals produced by chemical means as useless, and asserting that those produced by electrical means only are of value.

The new metallic colloids of silver and mercury recently introduced by Mr. Henry Crookes, under the name of "collosols," are made by an entirely novel chemical reaction and produce metallic colloids which are eminently stable and of great Brownian and bactericidal activity. The particles are of very small size and of perfect uniformity as seen under the ultra-microscope. It has also been found that when injected into the blood stream the particles do not block the capillaries. These collosols have been reported on by Professor Emil Hatschek as being "well made, free from reduced mercury and silver salt, and sufficiently stable towards electrolytes, heat, and the influence of organisms for all reasonable requirements." Mr. Crookes's collosols are made of a standard strength, namely 500 parts of metal to 1,000,000 parts of liquid—i.e., 1 in 2000. Laboratory experiments over a considerable period of time show that all bacteria experimented with are killed rapidly by one or the other of these collosols. The strength may be reduced to as little as 5 or 10 parts per 1,000,000, and in some cases as little as 1 part of silver per 1,000,000 has proved fatal to the bacteria in a few minutes. The bacteria experimented with were *B. coli communis*, *B. tuberculosis*, *diplococcus gonorrhœæ*, various forms of *staphylococcus* and *streptococcus*, and many others. The collosols are practically tasteless, of a reddish-brown colour, perfectly clear by transmitted light, and fluorescent by reflected light. They may be applied topically, hypodermically, intravenously, or by the mouth, and being non-toxic the dose hypodermically is unlimited, and experimental injections of 1 to 2 c.c. give little or no local or reactionary symptoms. It is necessary, of course, when giving hypodermically or intravenously that proper and usual precautions be taken. My own clinical experience with these chemical colloids during some months of recent practice entirely corroborates that of M. Duhamel with the electrical colloids, and I have treated the following cases with marked and surprising success. *Topically:* Septic and follicular tonsillitis, Vincent's angina, phlyctenular conjunctivitis, gonorrhœal conjunctivitis, spring catarrh. Impetigo contagiosus, acne of face and body, septic ulcers

of legs, ringworm of body, tinea versicolor. Soft sores suppurative appendicitis after operation (the wounds cleaned rapidly). Pustular eczema of scalp and pubes, chronic eczema of external meatus of ear with recurrent boils, and also chronic eczema of anterior nares. Offensive discharge in case of chronic suppuration in otitis media, bromidrosis of feet and axillæ. Blind boils of neck. *By injection:* Gonorrhœa and chronic cystitis (local), boils, epididymitis. In above cases I found that symptoms were relieved rapidly.

In these circumstances I feel justified in asserting that "collosols" are quite equal to, in their clinical action, if not better than, electric colloids, and my object in writing this letter is to bring before the medical profession the advantages that can be gained in treatment by the use of chemical collosols.

I am, Sir, yours faithfully,

C. E. ALEX. MACLEOD, F.R.C.S. Eng.

Ladbroke-grove, W., Jan. 24th, 1912.

SALVARSAN AND SYPHILIS.

To the Editor of THE LANCET.

SIR,—My first experience of salvarsan was in September, 1910, at the Hôpital St. Jacques, Brussels. The results observed there were quite brilliant, but in many cases the swelling caused by the injection was of the size of a clenched fist, exceedingly painful to the touch, and attended by great pain lasting often three days. One injection was made deeply into the muscles of the back.

Most of the writers on this subject in your columns have specially commented upon the painfulness of this procedure. Salvarsan, I think, is not very irritating or caustic to the tissues if properly prepared, but the sudden introduction of 10 c.c. of any powder in suspension which is not immediately absorbed must produce tension and consequently pain, even if not more serious consequences, such as necrosis and sloughing.

I have been using salvarsan ever since it was procurable on the market, and have employed it in the following manner. The emulsion is prepared at the side of the bed with all aseptic precautions. The patient lies on his stomach; both buttocks and the skin below both scapulæ are painted with tincture of iodine. Into each of these sites the emulsion is injected in about equal quantities. The needle of the syringe is necessarily somewhat large and four injections are more disagreeable than one, but any after-pains have in my cases been negligible, therefore opium has never been required either before or after the injection. Practically there has been no rise in temperature. The dose given has been 0·6 gramme except in the case of children.

All must, I think, admit the speedy and remarkable results of this drug in many forms of syphilis, but at the same time we are all familiar with the rapid improvement which takes place in some syphilitic lesions by the administration of large doses of the iodides.

Last year I saw in the Hôpital St. Louis, Paris, cyanide of mercury given intravenously; it caused not the slightest inconvenience to the patients, and benefited wonderfully the specific lesions. To produce rapid results it seems necessary to administer a powerful poison to the treponema, and excellent results follow the intensive treatment by mercury urged by M. Jacquet, which I have been using for some time. We must all be grateful for the addition of "606" to our weapons against the devastating action of syphilis; the dream of Ehrlich has yet to be fulfilled, though he has materially helped its consummation—the discovery of agents parasitotropic, but not organotropic, when administered in disease.

I am, Sir, yours faithfully,

Wigan, Jan. 23rd, 1912. R. PROSSER WHITE.

RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—It is just four years since this society was founded to make generally known the facts as to experiments on animals in this country and the regulations under which they are conducted, the immense importance of such experiments to the welfare of mankind, and the great saving of human and animal life and health which is already due to them. We hope that you will kindly allow us to report progress. During the past year the society has gained 1000 new members and associates and has formed ten new branches. It now has 5000 members and associates. During the year the society has lost by death eight of its vice-presidents—Sir Henry Butlin, Canon Duckworth, Lady Foster, Dean Gregory, Sir Joseph Hooker, Dr. Hughlings Jackson, the Bishop of Oxford, and Sir Samuel Wilks. The following have consented to act as vice-presidents: H.H. the Aga Khan, Mr. Waldorf Astor, Mr. Otto Beit, Lord Cobham, Lord Dunedin, Lord Leconfield, Sir Henry Morris, the Bishop of Rangoon, the Bishop of St. Asaph, Mr. Paul Swain, and the Bishop of Truro.

The following pamphlets and leaflets have been published during the year: (1) A Question of Ethics; (2) Experiments during 1910; (3) The Facts of the Case; (4) The Saving of Human Lives; (5) The Rockefeller Institute; (6) The Case presented by Antivivisectionists; (7) Recent Surgical Progress; (8) Antivivisection Shops; (9) Tuberculosis: (10) Sleeping Sickness; (11) Annual Report, Balance Sheet, and List of Members and Associates. A book is in the press, giving a full *résumé* of the evidence before the Royal Commission. It will be published within a few weeks after the publication of the final report of the Royal Commission.

Since Jan. 1st, 1911, the number of addresses, lantern lectures, and debates has been about 120. The quantity of literature which has been distributed has far exceeded that of any preceding year. The society has held stalls at various important exhibitions.

We greatly hope that many of your readers will become members or associates of the society, and will help its useful work. The hononary secretary will always be glad to answer every inquiry, to send literature to all applicants, to receive names for membership or associateship, and to make all necessary arrangements for addresses and lantern lectures in London or elsewhere.

We remain, your obedient servants,

CROMER, President.

SYDNEY HOLLAND, Chairman of Committee.

F. M. SANDWITH, Hon. Treasurer.

STEPHEN PAGET, Hon. Secretary.

21, Ladbroke-square, London, W., Jan. 27th, 1912.

MICHEL'S METAL SUTURES IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—Any detail about this valuable operation seems worth considering if time can be saved in making the junction between the stomach and the bowel without any loss of security. Murphy's buttons and time-saving apparatus such as the newly invented sewing-machine are now not often used. Most surgeons, I think, make a double row of stitching. But the interior row after the openings have been made in the stomach and bowel can be securely and quickly made by metal suturing. This procedure I have tried only in one case of gastro-jejunostomy in a patient exhausted and emaciated with cancer of the stomach and it proved perfectly successful. There is no need to point out the mechanical advantages of metal sutures or the rapidity with which adaptation can be effected. The small teeth are bitten together after use and a thin light ring results which should do no more harm than any other unabsorbable fixation. A metal suture takes a larger surface area of approximated tissue than does a stitch and a row of metal sutures is very light and flexible.

Mr. Moynihan's interesting paper on Jejunal Ulcer in the *Universal Medical Record*, p. 11, suggests remote injurious results from the use of unabsorbable ligatures and quotes Wilkie;[1] the presence of an unabsorbable suture in the granulation area tends to delay repair. Moynihan remarks that the evidence is "perhaps a little slender." Whether other surgeons have tried metal sutures in gastro-enterostomy I do not know, experience will encourage or discredit their use. We must be cautious in writing of any ligature as unabsorbable, for time, *edax rerum*, makes many substances soluble, and solubility has its peculiar dangers from mechanical, toxic, and chemotaxic causes.

I am, Sir, yours faithfully,

GEORGE WHERRY, M.C. Cantab., F.R.C.S. Eng.

Cambridge, Jan. 26th, 1912.

[1] Edinburgh Medical Journal, 1910, p. 2.

LOCAL REACTION IN TUBERCULIN TREATMENT.

To the Editor of THE LANCET.

SIR,—I was much interested in the remarks of Dr. H. W. Godfrey in THE LANCET of Jan. 20th, p. 194, with reference to the treatment of pulmonary tuberculosis with tuberculin. I am quite in agreement with him when he says that many cases are unsuitable for tuberculin treatment, and also with his remark that those which are suitable should be treated correctly; our difficulty is to know which is the correct method of treatment. There appear at present to be two ways of treating the disease; by one method a cure is attempted by stirring up the bacilli at the seat of disease, and the other by preventing the disease from ever becoming active in any way again. The first method can be accomplished by giving exercise and by giving tuberculin in sufficiently large doses, the second by rest and giving sufficiently small doses of tuberculin, in individuals who are apparently able to transform the injected tuberculin into some anti-substance before it reaches the diseased focus in the lung. Both methods in some cases produce cures. The latter method has, however, this advantage, that it is not dangerous, which cannot be said of any method that may cause renewed activity of the disease in such an organ as the lung. When possible, therefore, I have been accustomed for the last 12 months to attempt to produce a local reaction at the site of inoculation and none at the seat of disease. In this effort, in suitable cases, I have been quite successful, and have noted that when the local reaction has been severe the only symptoms following are beneficial, resulting in falling temperature, immediate diminution of sputum, increase in appetite and weight, and no increased activity at the diseased focus in the lung. Even with care one is liable to overshoot the mark and produce some focal reaction, but if a rectal temperature be taken, this can be perceived at once, and the next dose reduced in amount.

I first noticed local reactions when I began giving tuberculin in 1909. I am aware that Carl Spengler has given tuberculin injected into the forearm, but the reason for this being done in my cases was at first simply on account of convenience. Subsequently, when visiting other sanatoriums to study the question, I found that it was difficult to follow local reactions when the injections were made into more fleshy parts. However, so much has been written upon tuberculosis that it is almost impossible to read everything—indeed, if one does, the result is only likely to produce a feeling of incompetence in oneself, or to tempt one to go from treatment to treatment whilst the patient is getting worse. I have no particular wish to claim any originality in the matter, for if I really knew, I have no doubt someone else has pointed out that *with a severe local reaction it does not necessarily follow there will be any focal reaction*, and this, together with the necessity of taking a rectal temperature (a method I first learned to appreciate through the kindness of Dr. H. G. Felkin, of the Linford Sanatorium), are the matters which I wish to lay stress on, the most important temperature being that taken before rising in the morning.

I am, Sir, yours faithfully,

Ayrshire Sanatorium, Jan. 22nd, 1912. EDWARD E. PREST.

PSYCHOTHERAPY AND GENERAL MEDICINE.

To the Editor of THE LANCET.

SIR,—May I have space for a brief answer to Dr. E. Ash's letter on the above-named subject in THE LANCET of Jan. 27th?

1. Dr. Ash complains because I applied the word "chicanery" to the methods of bald suggestion. The word was certainly ill-chosen, and I withdraw it; for it imports not only deception but unworthy deception, and this last I did not intend to imply. For the rest, I conceive that when a man surrenders his judgment to another and accepts without criticism whatever he is told, then he is allowing himself to be imposed upon, even though the imposition be practised for his advantage. It was in the sense of such deception as this that my remark was meant; and I was far from wishing to asperse the integrity of those who employ direct suggestion.

2. Dr. Ash considers that what I described as "rational psychotherapy" is equivalent to "psycho-analysis" done badly. This is not the case, however, and I should be sorry if the two were at all confounded. For what I described is at the worst harmless, while I doubt whether so much can be said for the other, presuming that the method of Freud is the one indicated by my critic. Psycho-analysis seeks (by methods which do not commend themselves to me) to unearth past emotions which, though long since forgotten and lost to consciousness, are yet capable, so it is said, of perpetrating mischief upon the patient. There is nothing so abstruse or dubious about the proceeding I urged, which, from the diagnostic side, amounts to little more than this: that one should be on the look-out to detect the occasions on which a patient consciously withholds from the doctor his ill-founded but damaging apprehensions of physical disease, while he emphasises to a deceptive extent the symptoms upon which those apprehensions are based.

3. Dr. Ash credits me with claiming that "rational psychotherapy" is immeasurably superior to direct methods of suggestion. I am pretty sure that no such claim can be read into the article with justice. For I was at pains to write with the moderation demanded both by my own experiences of the method I wrote of and by my ignorance (correctly surmised by Dr. Ash) of the practice of direct suggestion. It does, indeed, seem to me axiomatic that of two methods, one of which appeals to reason and the other (frankly) to something quite remote from reason, the former is likely to be the more healthy for the patient, and should be chosen if possible. But the choice is not always open, and I can imagine well that many patients who are beyond the reach of "rational psychotherapy" might be amenable to the methods of my critic. They will be, however, people whose loss of mental equilibrium is more profound than is the case with the classes of invalid to which my article referred, the latter being typified by the common run of patients who attend the medical practice of a general hospital, not those who are hovering between the neurologist and the alienist.

4. It is undoubtedly true, as your correspondent says, that an element of direct suggestion enters, in practice, into "rational psychotherapy," but this fact does not seem to me to stultify the essential objective of the method, which is to appeal to the patient's reason.

I am, Sir, yours faithfully,

WILLIAM P. S. BRANSON.

Devonshire-place, W., Jan. 28th, 1912.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—I was glad to see the able letter of Dr. E. T. Larkam in THE LANCET of Jan. 27th. He goes to the whole root of the matter when he says that independence is the primary and essential requisite for our profession. We should all urge this as our first principle, and be satisfied with nothing less. What good are the "cardinal points" if they are under the control of—and administered by—committees composed chiefly of adherents of un-Friendly Societies? "That were low indeed, That were a shame and ignominy beneath this downfall"!

I am, Sir, yours faithfully,

Winchester, Jan. 29th, 1912. W. HARMAN.

To the Editor of THE LANCET.

SIR,—At a meeting of the council of the British Hospitals Association on Jan. 18th the following resolution was unanimously carried:—

> The British Hospitals Association is strongly of opinion that upon the Insurance Act coming into force insured persons, except for accidents or sudden emergency, should no longer be received in the out-patient or casualty departments unless accompanied by a certificate or introduced personally by the medical practitioner who is in attendance, and in such a case after consultation he should be referred back to the same medical attendant, with an expression of the opinion of the hospital physician or surgeon on the case.
>
> And that a list of all such insured persons, and the practitioners by whom they are sent, should be forwarded to the Insurance Committees of the district periodically.

With regard to the in-patients, the council are drawing up

a general statement for the information of members of the association upon the bearing of the Insurance Act on the in-patients, which will be sent out shortly.

I am, Sir, yours faithfully,

A. WILLIAM WEST.
Chairman of Council.
E. STEWART JOHNSON,
Hon. Treasurer.
DONALD J. MACKINTOSH,
Hon. Secretary.

Jan. 24th, 1912.

To the Editor of THE LANCET.

SIR,—In deciding the mode of payment to be adopted do not let us forget the ever recurring epidemics of influenza and the appalling amount of extra work thereby incurred for which hitherto we have never received an extra penny from the so-called Friendly Societies. In rural districts these epidemics are much to be dreaded. Since the beginning of the year I have scarcely had a spare moment owing to this disease.

I am, Sir, yours faithfully,

T. CUMING ASKIN, M.D. Dub.

Alderton, Woodbridge, Suffolk, Jan. 29th, 1912.

To the Editor of THE LANCET.

SIR,—It has been decided to hold a special Representative meeting of the British Medical Association on Feb. 21st in order to determine the position that the Association is to take up with regard to the National Insurance Act. It is generally recognised that the decisions come to at that meeting will have a momentous effect on the practices of present members of the profession, on their successors, on the advance of medicine, and ultimately on public health. It is, therefore, most desirable that those medical practitioners who propose to instruct these Representatives should be conversant with the actual details of the Act and not allow their minds to be swayed by side issues.

No better means could be found for placing medical constituents in a position to give sound instructions than for them to use the interval, before they have to come together in a Division meeting of the Association, to hold several small informal meetings amongst themselves. These meetings need not be of long duration, should not be made an excuse for speeches, but rather should be educational in their aim and devoted to an exchange of ideas. They could be arranged by any member inviting those in his immediate neighbourhood to discuss the subject with him. Possibly it might be desirable to hold a separate meeting for the consideration of certain subjects, and so to limit the range of discussion on each occasion. Subjects that suggest themselves are the relation of the Act to (1) club practice; (2) private practice; (3) charitable medical services; (4) existing State medical services. It would prove useful if before attending these meetings each practitioner were to read through the following sections of the Act: Sections 1; 8; 10 (1); 11; 12; 14 (1), (4); 15; 16; 17; 18 (1); 19; 20; 21; 37 (1) (*a*); Schedule 4, Part 2; 42; 45 (1) (*d*); 46 (2) (11), (3) (*f*), (3) (*h*); 48 (12); 51 (*i*); 57 (1); 58; 59; 60 (1) (1); 60 (2); 61 (1) and (2); 62; 63 (1); 64 and (2); 65; 69 (1); 78; 83.

Were hundreds of such informal meetings held throughout the United Kingdom during the next few days there would be less heard in the Association of demands for an amending Act, when all that could possibly be required is obtainable in the Regulations (see Sections 65 and 78); of the incompetency of the electors to instruct their Representatives; and of the failure of these Representatives to deal adequately with the situation created by the National Insurance Act.

I am, Sir, yours faithfully,

SPECTATOR.

Jan. 23th, 1912.

ROENTGEN SOCIETY.—A meeting of this society will be held on Tuesday next, Feb. 6th, at the Institution of Electrical Engineers, Victoria Embankment, London, W.C., at 8.15 P.M., when a paper on After-glow in Vacuum Discharge Tubes will be read by the Hon. R. J. Strutt, F.R.S. The honorary secretaries are Dr. F. Harrison Low, 13, Wimpole-street, W., and Dr. Robert Knox, 7, Harley-street, W.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

Motor-car Licences.

UNDER the Finance (1909–10) Act, 1910, Section 86 (4), it is provided that if any motor-car is kept by a medical man for the purpose of his profession, he shall be entitled to an allowance in respect of the duty payable under this section on the licence for the car equal to half the amount of duty so payable. Practitioners claiming this should ask at any post office for Form No. 1A, and fill in that form instead of the usual Form No. 1. In London this form, together with the duty, should be sent direct to the Comptroller, London County Council, 23, Cockspur-street, S.W. In other counties this form must first be certified by the local licence authority.

The 12 h.p. Rover Car.

For many years the Rover Co., Limited, of Meteor Works, Coventry, and New Oxford-street, London, W.C., have enjoyed, especially among doctors, the best of reputations, and deservedly so, on account of their excellent 6 and 8 h.p. cars, which many of the profession have run with success, and, what is more, disposed of at very good prices when their "motor fever" had become more acute and they had decided to buy a larger and more powerful car. The one point which I believe proves, more than anything else, the reputation of a car is the value that a second-hand one fetches, and I have heard of a Rover which, after six months' use, fetched within 20 per cent. of its original cost.

A particular aspect of the new Rover Car is that it is fitted with a Silent Knight engine, which is made at the Meteor Works under the same patents as those of the Daimler, Panhard, and Minerva Companies. The fact that so many firms have adopted slide valve engines, and that the Daimler Co. have now sold them for some three years, is unquestionably a proof that the type answers, "F.R.C.S. Eng.," writing in THE LANCET of July 8th last year (p. 124), states that he ran a 15 h.p. Daimler fitted with this type of engine 5203 miles in a year, and that the only mechanical breakdown in that period was caused by the fracture of a ball race. Yet I do like the old poppet valve engine, and when anyone holds forth too enthusiastically on the other I always think that, if the inventions had come in the reverse order, the originators of the poppet type would have proclaimed the simplicity of the poppet over the slide valve.

The engine of the new 12 h.p. Rover is a two-cylinder one, bore 96 mm., stroke 130 mm., which means to doctors a tax of £1 11*s.* 6*d.* Except that it has only two cylinders, it is similar in construction to the four-cylinder Silent Knight Daimler described on p. 1025 in THE LANCET of April 15th, 1911. The oil-troughs under the big ends of the connecting rods have not a variable depth. The oil is pumped from the sump to the receptacles beneath the big ends, which are fitted with scoops. These pick up the lubricant as the engine revolves and splash it on to the pistons, sleeves, and bearings, when it passes through a gauze back to the sump. All that is required is to fill up with oil until it escapes from an overflow tap. Two small pumps convey the oil to the troughs, and a third pump, by a pipe outside the crank-case, with a branch to an indicator of large size on the dash, conveys oil to the worm-gear driving the water-pump and magneto. An adjusting screw to regulate the supply is fitted near the crank-case, so there is no possibility of any oil leaking on to the dash, which is a common occurrence when it is placed near the drip. As long as oil passes through the indicator the lubrication is complete. As the combustion heads are machined, pre-ignition from carbon deposit in these particular places is unlikely to occur; but if there is excessive over-lubrication the piston head may become sooted, and so cause explosion of the mixture prior to complete compression. On these cars the cylinder heads can easily be removed, and thus any deposit of burnt oil may be scraped away. This, however, should not be needed more than once in two years, and perhaps not even then if the lubrication is correctly adjusted.

The carburettor is of the two-jet type, and gives the fullest power of which the engine is capable. It has—what I believe is the one important feature that all carburettors should possess—a jet which can be easily taken out. A

satisfactory petrol filter is fitted. The water is circulated by a centrifugal pump driven by worm-gearing, and has the advantage that, should by any possibility anything happen to it, there is still a clear passage for the cooling fluid to pass properly. The radiator is of the honeycomb pattern, and is attached to the frame by hinges, so that road shocks are not likely to cause it to leak. A fan is fitted behind, but the circulation is so efficient that the makers recommend running without it in winter. The ignition is the Bosch duplex, consisting of a high tension magneto and a small and compact switch and coil, which latter is in connexion with the primary winding of the magneto, the effect of this being that by the aid of a four-volt battery the output of the magneto is increased by self-induction, and at even very low speeds a strong spark is induced, and the engine can always be easily started. The coil is not intended for continuous running, and when the engine has started the switch should be turned over to the magneto position. The clutch is of the flat metal plate type, consisting of the main clutch body, two steel and three phosphor bronze plates, and a back compression ring operated on by three levers, which are either compressed or released by means of the clutch spring or clutch pedal respectively. It can be easily removed without taking down the gearbox or engine, and runs practically dry. All that is needful when reassembling the plates is lightly to smear them with oil.

Opinions, I know, differ as to whether a leather-faced cone clutch or a multiple disc is the best. Personally, I believe that either, if well made, acts equally well, and certainly the Rover type of the latter is well made, grips well without being fierce, and on the test I gave it certainly the multiple disc was ideal. The gearbox is fitted with a gate change, and the change speed levers and quadrant are connected direct to the gearbox by means of an aluminium casing, so that any slight movement in the frame, due to road shocks, cannot affect the change speed, which I found always to work easily and smoothly. Three speeds forward are provided, and though I know there are many advocates of four it seemed to me that three are ample for a car of this power. All the gear shafts run on ball bearings. Between the clutch and the gearbox the coupling takes the form of a double universal joint, one-half of the star variety, the other of the sliding block kind, which permits of the movement required to withdraw the clutch. A flexible union like this appears undoubtedly to have an advantage over what is known as the unit system, in which the engine and gearbox are either made in one piece or are bolted together so that they are solid. The final drive is by an encased propeller shaft, with a ball type universal joint at the front end, to a worm drive back axle, with the worm on top of the worm wheel. This gives greater clearance, and gets the whole of the transmission from the engine to the back axle in line, a method that gives longer life to the universal joint. Those who fit the worm below ignore the wear their method entails on the universal joint, and claim that the freedom they obtain from bad wear compensates. In a well-supported worm, such as on this car, the fear of bad wear may, however, be disregarded. Both brakes are applied directly to the back wheels, and are of the internal expanding variety, the expanding segments taking effect upon concentric drums, the hand-worked one acting on the smaller drum, and the pedal controlled one on the outer. It certainly does seem a great advantage that the brake strain is direct and not conducted through the gears, as is the case with the ordinary propeller-shaft brake.

The springs are semi-elliptical. Daimler pattern supplementary coil springs are fitted to the back of the rear springs, which are really shock absorbers, and make the springing of the car most luxurious, eliminating the evil effects arising from unevenness of road surface, and thus doing away with slipping between the tyre tread and the road, and effecting a saving in the wear of the tyre. I understand that on these cars as much as 8000 miles can be had out of the back tyres. A small but useful refinement is that the spring ends and shackles are fitted with greasers, and if these are but kept replenished the rattle which occurs in so many cars at these points should be avoided. The petrol tank is on the dash and is filled from inside the car. The undershield extends back to the gearbox. The tyres are Dunlop 810 mm. by 90 mm.

The standard body is flush-sided, of a torpedo type, and is ideal for the profession. With the hood up ample protection is given in all kinds of weather, and the scuttle dash and high side doors are certainly a great improvement on the old pattern type of body which left the front seat occupants so exposed to the elements. I would suggest, however, that in hot weather a ventilator might be fitted, as the heat from the engine makes the front compartment rather close and hot.

I spent a morning in visiting patients and in driving over all the villainously bumpy roads I could find—and Kent still boasts a few—and yet we travelled wonderfully comfortable. Most hills were easily climbed on second speed, and only on hills such as Willenhall-road, Woolwich, 1 in 5, was the first needed. Both in the open country and in traffic the car was simplicity itself to drive, and in addition, whether crawling through Victoria-street, Westminster, or at high speed over Dartford Heath, the engine sensation was of the smoothest, and the pull continuous and regular. I have seldom handled a car which gave more pleasure to drive, and I can certainly strongly recommend it as a suitable mount for medical men.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Drainage Scheme.

THE city surveyor, Mr. T. de Courcy Mead, on Jan. 22nd, in a lecture on this subject, said that a hundred years ago the open country was within a few minutes' walk from any part of the town. The inadequacy of the present system of sewers was well known, hence the scheme to provide better sewerage arrangements. Manchester was incorporated in 1838, and in 1853 the borough was constituted a city. In 1885 the area was enlarged from about 4300 acres to about 6000. In 1890 the area reached 13,000 acres, and by other additions in 1909 the area was increased to 21,643 acres, more than five times the original area. In the same period the population increased from 222,120 to 695,173, or three times the population of 1838. The present population is 714,427. The Mersey and Irwell Joint Committee was established in 1891 to enforce the provisions of the Rivers Pollution Prevention Act, 1876. Already the sum spent under its jurisdiction is about £6,070,000, and the population in the area supervised is 2,782,215. An effluent of a high standard of purity is necessary where large volumes of sewage are discharged into a canal, as is the case in Manchester. The new works, for which Parliamentary sanction has been obtained, will cost about £1,000,000, which will be met by a loan payable over a period of 50 years. When completed the drains will be of sufficient capacity to take the sewage from an area of 60 square miles with a population of 1,500,000. When the scheme for main drainage is completed it is asserted that it "will make Manchester one of the best drained and in every respect the most sanitary city in the kingdom."

Manchester Royal Infirmary: Post-Graduate Demonstrations.

In order to suit the convenience of practitioners it has been decided to alter the day on which medical demonstrations are given from Monday to Tuesday. The surgical demonstrations will be held as heretofore on Friday. The demonstrations will accordingly be given at 4.30 o'clock every Tuesday and Friday afternoon throughout the year, with the exception of Whitsun week and the months of April, August, and September.

Verdict of "Self-murder."

The Manchester coroner held an inquest on Jan. 23rd into the death of a married woman of Bolton from lead-poisoning caused by a drug she had taken. The grave crime of taking drugs in certain circumstances, said the coroner, was very prevalent among women. If a woman deliberately made up her mind to commit that crime, and took the drug in sufficient quantities to achieve her object, she might cause her own death. At first the jury wished to return a verdict of "Accidental death" on the ground that the woman had not intended to take her own life, but the coroner pointed out that the verdict was hardly in accordance with the evidence, for the woman knew what the risk was when she took the drug, and was warned when she bought the drug. Eventually a verdict of "Self-murder" was returned.

Athletics from a Medical Viewpoint.

Dr. A. Abrahams, in lecturing on this subject in Manchester on Jan. 24th, by means of a series of instantaneous photographs taken at critical phases of the movements of high jumpers, sprinters at the start, in their progress, and at the tape, hurdle jumpers, lawn tennis players, cricketers, and footballers, showed how such photographic records might be useful in exhibiting excellences or defects in style. A committee had been appointed to collect information and to inquire into the question of athletics with a view to putting games on a scientific basis, to ascertain the best methods of training. He had not been able to convince himself that smoking made any difference, perhaps because the athlete was always a very moderate smoker. He favoured those forms of exercise which had a high psychological as well as a physical value—tennis, golf, and the like. He did not think much of the "constitutional"—of walking—nor yet of swimming, because its physiological value was low and the person was moving in an abnormal medium, and perspiration was ineffective. Rowing was really a very severe form of exercise, partly because of the peculiarities of the breathing movements of the chest.

Jewish Hospital; A King Edward Ward.

In the annual report of the Jewish Hospital, Cheetham, it is stated that the King has honoured the hospital by permitting a ward "to be named to the memory of His Majesty King Edward." During the year 693 cases were treated in the hospital and 6816 in the out-patients' department. The income fell short of the expenditure by £426. Mr. Adolph Ahrens gave a donation of £1000, while £250 each were given by Mr. Mark Shaffer and Messrs. John Levy, J. N. Levy, Harry Levy, and C. L. Levy.

Vaccination Exemptions and Officials' Fees.

In the Altrincham, Wilmslow, and adjacent districts the increasing number of vaccination exemptions has greatly reduced the emoluments of the vaccination officers. In view of this fact the Bucklow board of guardians on Jan. 23rd decided to pay each officer 9*d.* for each exemption granted since April last year. The first exemption was granted only four years ago.

Important Cases under the Workmen's Compensation Act.

The point as to whether a miner with only one eye can work satisfactorily at the "coal face" was raised in the Salford county court before Judge Stanger on Jan. 16th. A miner claimed compensation from his employers in respect of an accident which he met with in one of his mines in December, 1908. While working at the "coal face" he was struck by a piece of ironstone on the right eye. Compensation was paid at the rate of 15*s.* 7*d.* per week until April, 1910. Other and lighter work was found for him for which he was paid 3*s.* 7*d.* per day with 6*s.* 7*d.* per week partial compensation until August, 1911, when his employers considered him fit to go back to his work as miner. The question raised was whether a man who had practically lost the sight of one eye was fit to work at the "coal face," or only able to do the easier work which a day wageman has to do. It was contended that as the plaintiff was 52 years of age, and had lost an eye at that age, after 30 years in the mine, it was practically impossible for him to adapt himself to the altered conditions, having acquired his skill with the full use of his sight. Evidence was given for the defence that the injured organ had still a certain amount of capacity. The judge found that the man was not fit to work in the mine, but only on the surface, and awarded compensation at the rate of 6*s.* per week.

Another unusual case came before Judge Mellor on Jan. 25th. The applicant was married to her late husband in March, 1910, and he was killed while working as a carter for the defendant in June of last year. The widow had signed a paper expressing her willingness to accept £170 in full settlement. If she was wholly dependent she would be entitled to a full three years' wages amounting to £232. Before marriage she had earned 15*s.* per week; after marriage she continued to work and was still doing so. The registrar refused to sanction the settlement on the ground that the amount was not adequate. Ultimately a judgment for £192 was pronounced, as the widow was not wholly dependent on the wages of her late husband.

Large Bequests for Hospitals and Charities.

Miss Helen Swindells, of Elmstead, Birkdale (formerly of Bowdon), has left bequests, all free of duty, which include the following:—University of Manchester, to be applied by the Council of the University in aid of the Cancer Research and Pathological Department of the said University, £5000; Manchester Royal Infirmary, £4000; Manchester Hospital for Consumption, Hardman-street, and St. Mary's Hospital, Manchester, each £3000; Devonshire Hospital and Buxton Bath Charity, Northern Counties Hospital for Incurables, Manchester Children's Hospital, Pendlebury, Boys' and Girls' Refuges, Strangeways, Charter-street Ragged Schools, Street Children's Mission, Wood-street, and Crippled Children's Help Society, Cross-street, each £2000; Southport and Birkdale Nursing Society, £1000; and the sum of £5000 to form a fund for distressed ladies.

Cost of Lunatics in Lancashire.

At the Ashton board of guardians there was a call from the county council for £18,369. This is largely due to the increased cost of lunatics.

Jan. 30th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Hospital Sunday in Bristol.

THE collections for the Lord Mayor's Hospital Sunday Fund were taken in Bristol on Jan. 28th. The statement issued showed that the four principal institutions—the Royal Infirmary, the General Hospital, the Children's Hospital, and the Eye Hospital—had been responsible for the treatment of over 110,000 persons during 1910, their total ordinary income amounting to £7000 less than their ordinary expenditure. During the years of its existence this fund has amounted to over £23,000. The result of this year's collections is, of course, not yet known, so that it is impossible to say whether the total will be influenced by the Insurance Act. The Lord Mayor, Mr. F. W. Wills, speaking at the Colston Hall on the Sunday afternoon, pointed out that the illness for which treatment was provided by the Act was of a different type from that for which the hospitals were responsible, and that it was therefore as necessary as ever to subscribe liberally to their support. It was also pointed out from at least one pulpit in the city that the Act does not come into operation for six months, and that it is therefore incumbent on the citizens to provide for the upkeep of their hospitals during that period on the same scale as heretofore. There is unfortunately reason to believe that the subscription lists are already suffering as a result of the Act; whether this falling-off is temporary or permanent remains to be seen, and it is not yet possible to ascertain the effect of the Act on the contributions of workpeople, which form a large proportion of the regular income of the Bristol hospitals. At the General Hospital and at the Royal Infirmary the extension schemes, which are being pushed forward, show no signs of interruption, the committees no doubt realising that the public will need hospitals in the future as in the past, and that money will have to be found for their support, whether voluntarily or through Government channels.

Bristol Eye Hospital.

The 101st annual meeting of the Bristol Eye Hospital was held last week, the Lord Mayor being in the chair. The annual report stated that the increased accommodation provided by the centenary collections had been fully utilised; there had been 578 in-patients and 8258 out-patients, an increase of 131 and 1257 respectively over the preceding year. There was a deficit of £47 on the year, which would have been much greater had it not been for large anonymous donations given in response to an urgent appeal made through the press towards the end of the year. An additional £500 yearly in subscriptions is absolutely necessary. The Lord Mayor said that he had been surprised to find from the report how large a number of the patients came from outlying towns and villages, and he had felt this to be so important that he had addressed a special appeal for help through the Sunday Fund to the clergy of the various places sending patients to the hospital. Mr. F. Richardson Cross said, in reference to the Insurance Act, that its probable result would be to increase, and not to relieve, the work of the hospital. He also stated that no less than 932 of the patients seen at the

hospital during 1911 came from the school medical officers, although the education committee made no contribution whatever to the funds of the institution. As most of these are refraction cases a considerable strain is added to the already arduous work of the staff.

Lectures to Voluntary Health Visitors.

The first of a series of elementary lectures for voluntary health visitors and others, arranged jointly by the Mothers' School, the Civic League, and the Bristol Women's Local Government Association, was given last week at the University of Bristol by Dr. Annie Cornall.

The Residence of a District Medical Officer.

There has recently been some discussion by the Plymouth board of guardians in reference to the residence of one of its district medical officers. The gentleman in question does not reside in his district, but has a branch surgery there in telephonic communication with his house. The Local Government Board was prepared to sanction the appointment for three years. After several guardians had spoken highly of the medical officer's kindness to the poor, a resolution that he should be appointed for three years was defeated by four votes. It was then proposed that the appointment should be advertised, but eventually an amendment was carried to the effect that the medical officer should be given another opportunity to comply with the guardians' requirement that he should reside in his district.

Boric Acid in Sausages.

At the Exeter police court on Jan. 19th a local tradesman was summoned for selling sausages containing boric acid. Evidence showed that 1 lb. of sausages contained 52·5 grains of boric acid. The bench fined the defendant £2 and costs.

Proposed School Clinic at Plymouth.

The clinics subcommittee of the Plymouth Education Committee has recommended that the Board of Education be asked to give its approval to a scheme for providing a clinic for the children of parents who cannot afford to pay for a private medical man or who cannot obtain treatment at the various medical institutions in the town. The subcommittee recommends that the conditions treated by the school medical officer should be extractions of teeth, defects of ear (suppurative), skin diseases (including ringworm, scabies, and impetigo contagiosa), and pediculosis of the scalp and body. The subcommittee adds that it is impossible to state with any degree of certainty the number of children who will require treatment, and recommends that the school medical officer should have his salary increased by £50 per annum for the extra work he will be called upon to perform, and that the sum of £100 should be the limit of this expenditure for the financial year.

The Teignmouth (Devon) Hospital.

At the annual meeting of the subscribers of the Teignmouth Hospital held on Jan. 24th it was stated that the charity had been without a house surgeon for some six months, and that the duties had been performed by the honorary medical staff. Some discussion took place upon the question of obtaining a house surgeon, and it was thought that the salary of £80 per annum, which was offered, was not sufficient. Eventually it was decided that the medical staff should report upon the subject to the committee.

The South Devon and East Cornwall Hospital, Plymouth.

The treasurer of the South Devon and East Cornwall Hospital states that during 1911 the institution received £838 from the Hospital Sunday Fund and £581 from the Hospital Saturday collections.

Death of Brigade-Surgeon-Lieut.-Colonel T. G. Skardon.

Brigade-Surgeon Thomas Gray Skardon died at his residence, "Simla," Paignton, Devon, on Jan. 24th, aged 75 years. He received his medical education at St. Thomas's Hospital, London, and took the M.R.C.S. qualification in 1859. A year later he entered the Indian Medical Service, serving with the Bengal Army. After 25 years' service in India he retired and took up his residence at Paignton. He soon became very popular there, and took great interest in all local matters. He was a staunch Churchman, and with some other residents was instrumental in the building of Christ Church, Paignton. He was greatly interested in missionary work. The funeral took place at Maker, near Plymouth.

Death of Dr. William Dashwood Kingdon.

Dr. W. Dashwood Kingdon died on Jan. 20th at his residence, Heavitree House, Exeter, in his ninety-ninth year. The deceased, who received his medical education at Edinburgh University, graduated M.D. in 1837, and in the same year was admitted L.R.C.S. of Edinburgh. Dr. Kingdon was well known and highly respected at Exeter, and was at one time physician to the Exeter Dispensary and resident medical superintendent of St. Thomas's Lunatic Hospital, Exeter. He had retired from active work for some years. He took a great interest in Freemasonry, and was stated to be the oldest "Mason" in the world. The funeral took place at the Higher Cemetery, Exeter, on Jan. 25th.

Jan. 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

CONSIDERABLE surprise is felt and expressed that the Insurance Commissioners, in their letter of Jan. 24th, addressed to the British Medical Association, asking them to appoint 20 members, selected from England, Scotland, and Wales, to attend a conference on Feb. 2nd, have totally ignored Ireland. Ireland has no medical benefits, it is true; but, on the other hand, workmen who come over to Ireland from other parts of the United Kingdom, having previously registered there, will be entitled to receive medical benefits while in Ireland, and in that country sanatorium and maternity benefits exist under the Act. All sorts of medical certificates, moreover, will be required, so it is not clear why Irish practitioners are not asked to join in this preliminary conference. At a meeting of the Ulster Branch of the British Medical Association held in Belfast on Jan. 25th a discussion took place in reference to the appointment of an organising committee for Ulster, and it was finally decided to ask the Council of the Ulster Branch to select the names, taking care that the various towns and districts were fully represented. The Presbyterian Church of Ireland and the Methodist Church are taking action to form approved societies under the Act, and it is also stated the Church of Ireland will act in the same direction.

Irish Milk-supply.

The Vice-Regal Commission on Irish Milk-supply has continued its sittings. Last week Mr. E. Kennedy, of Straffan Station Stud, expressed the opinion that tuberculous disease was increasing steadily among cattle. Tainted milk was mixed in the same creamery vat with sound milk, and all the milk became tainted. He believed that an increased percentage of affected cattle was caused by feeding calves on separated milk and by the bad conditions in which the cattle were housed. A regular and recognised trade was being done at fairs in these tuberculous cattle, or "spiners." Cattle in an advanced state were sold as "sausage meat." Miss Martha Lough, of Killeshandra, on the other hand, said she was a strong believer in separated milk, and thought it a most useful food for calves and people. Mr. J. H. M'Grane, dairy inspector, South Dublin district council, was not aware of a single case in his district of infectious disease being traced to a dairy, or having been disseminated by the milk of the district. Mr. J. D. Richardson, veterinary inspector, North and South Dublin rural district councils, said that the number of diseased animals in his district had considerably decreased during the past three years. In the city the owner of an animal that was destroyed was compensated, but in rural districts no compensation was given to the owner. He was in favour of the licensing of dairy proprietors. Dr. John Lumsden, physician to Mercer's Hospital and chief medical officer to Guinness's brewery, said that since 1908 he had had under observation 120 sick babies that were supplied with milk from the depôt of the Women's Health Association at Sitric-road, and among the 120 only 5 deaths had occurred, the ratio being 41 per 1000, as compared with 145 in the city. He had never seen any harm result from the use of pasteurised milk. As a clinical observer he had seen no harm result from the use of boiled milk.

Reception at the Royal College of Surgeons.

The President of the Royal College of Surgeons and Mrs. Robert Woods gave a reception to a large number of visitors

last Saturday evening at the College, to have the honour of meeting their Excellencies the Lord Lieutenant and the Countess of Aberdeen. Uniforms, decorations, and academic robes were worn. Objects of scientific interest were exhibited by Professor J. A. Scott and Professor Arthur H. White, and adulterants of food were shown by Sir Charles Cameron. The reception was attended by a large number of medical men, as well as by representatives of various other professions. The College has rarely, if ever before, been thrown open for an evening party.

Research Defence Society: Dublin Branch.

The annual meeting of this branch was held on Jan. 25th, Sir Charles Ball presiding. The annual report stated that the number of members was over 500. A ladies' committee had been formed, which had undertaken to arrange drawing-room meetings at which information should be given as to the objects of the society. A lecture was delivered by Dr. Leonard Hill, professor of physiology in the London Hospital Medical College, on "Submarine Diving Made Safe and Possible through Experiments on Animals." He dealt with what has so far been accomplished through the medium of scientific research, by means of experiments on animals, to make the operation of compressed air work safe for those engaged in it. He mentioned that formerly work, such as the building of harbours, piers, &c., was attended with great danger to life and health, but scientific investigation had done much to show that those evils could be avoided, new and improved methods having been discovered as a result of experiments which had been made upon such animals as frogs, rabbits, and cats, and the work could now be carried out with safety. One of the most important discoveries had been made by Dr. John S. Haldane, a distinguished member of the Research Society, who proved that in deep-sea diving illness among divers was caused, not by increased pressure, but by insufficient air. By using additional pumps increased pressure was forced down to the diver, who was enabled to overcome carbonic acid poisoning.

The Belfast Medical Students' Association.

At the annual public meeting of this association, held on Jan. 27th in the Students' Union of the Queen's University of Belfast, the inaugural address was delivered by Dr. W. W. D. Thomson, the new President, on the Struggle for Truth in Medical Science throughout the Ages. Sir Thomas Myles, of Dublin, followed with an address on the Medical Student as I Know Him.

The Belfast Hospital for Sick Children.

At the thirty-ninth annual meeting of this institution held on Jan. 25th the medical and surgical report, submitted by Dr. John McCaw, secretary of the medical staff, showed that during the past year 672 patients had been treated in the wards (361 medical and 311 surgical), while in the out-patient departments 3936 new cases were registered. Thirty-one senior students are attending the clinics, the local Queen's University having wisely made diseases of children a compulsory subject for those seeking its medical degrees, as well as requiring candidates to produce a certificate of having attended a special practical course in hospital on diseases of children. Fears were expressed both in the report and by subsequent speakers as to the serious effect of the Insurance Act on subscribers to the hospital, especially as children paid no insurance and received no benefits under that measure.

Londonderry Nursing Society.

At the annual meeting of this society held in Londonderry on Jan. 23rd, the Duchess of Abercorn presiding, a very satisfactory report was read. Dr. G. B. McCaul mentioned that during the year 1339 new cases had been attended to by the nurses. Lady Hermione Blackwood also gave an address at the meeting.

Appeal on Behalf of Miss Daly.

An appeal signed by Dr. M. Cagney, of South Mall, Cork, and Mr. Philip G. Lee, of St. Patrick's Hill, Cork (either of whom will receive subscriptions), has been issued to the Cork medical profession on behalf of Miss Daly, who through the death of her brother, the late Dr. Pierce J. Daly, of Cork, is now left absolutely devoid of means, and in shattered health in consequence of long years of devoted nursing. Subscriptions to the extent of £395 have so far been made, but a more liberal and substantial response will be required in order to enable her to avoid having to enter a public charitable institution.

Jan. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Sale of Quinine in Annam.

THE Chief Resident in Annam has taken the following measures for the sale of quinine at a low price, its free distribution being for the time suspended. The sulphate in compressed tablets will be used. The price for each province will be settled by the Resident at a round sum without any profit for the administration. A central depôt will be established at the principal settlement, under the control of the chief surgeon, who will indicate the necessary depôts to be established by decree of the Resident, use being made of the wine-shops and the rural post-offices, preferably of those situated in the regions most affected by malaria. The local sanitary officers will give instruction as to the details of application, and will take advantage of their tours of duty to inform the natives of these plans, the dose, method of use, and price of the drug. Posters containing like information will also be affixed on the doors of the secondary depôts.

Special Rights of Way for Paris Medical Men.

M. Massard, a municipal councillor, has laid before the council a measure the adoption of which would render great service to Paris medical men. It calls on the Prefecture of Police to establish a special right of way for medical men, conferring on them the right of priority in public vehicles, to be obtained by extra payments, and of having first access to the Metropolitain. This measure is all the more justifiable inasmuch as medical men are not usually too well off, and in the matter of transport they make use for the most part of the public means of conveyance, while their engagements are always a matter of urgency. The badges issued to journalists are useful, but a special badge would be quite fitting and certainly as useful for medical men, who should not be hindered in the discharge of their duty.

Preserving the Transparency of the Human Cornea.

The transparency of the cornea of the eye is of great delicacy. Very quickly after the removal of the eye, or after death, the eye becomes glazed and its epithelium desquamates. M. Magitot recently reported to the Academy of Sciences his success in preserving for 15 days after removal the optical qualities of a human eye from which a graft was to be made. A glaucomatous eye had to be removed on account of intolerable pain. Sight in this eye had been definitely lost for months, and it was so tense that the cornea was insensitive and even opalescent. The entire eye, immediately on enucleation, was washed in Locke's solution, and immersed with all aseptic precautions in a flask containing blood serum from another person. It was then put in cold storage at 5 to 6° C. At the end of some hours, the internal pressure of the eye having fallen, the cornea had regained its transparency. This eye was kept for eight days. Then a rectangular piece, half the thickness of the cornea, was taken carefully and inserted into a cavity of the same dimensions made in the cornea of another patient, who some years before had had some quicklime in his right eye, in consequence of which the cornea had become opaque almost throughout. The graft from this tissue, preserved for eight days, was inserted without sutures to the right side of the pupil, thus forming a little window about 5 by 4 mm. At the end of 38 hours the transplanted tissue had perfectly adhered. For seven months the foreign tissue has now been tolerated, has retained its transparency, and affords the patient sufficient power of vision to get about with. To obtain this result the author recommends that an appropriate medium be chosen, consisting of the hæmolysed serum of an individual of the same species. The hæmolysis should be brought about by purely physical means—e.g., rapid fall of temperature by collecting the hot blood in a vessel chilled by ice. A low, but not too low, temperature is necessary, the most suitable being between 4° and 7° C., and it should be constant.

Radiography of the Viscera.

On Jan. 25th the Société de l'Internat des Hôpitaux held its first annual session under the presidency of Dr. Monprofit, the subject under consideration being radiography of the viscera. Radiography is now widely used in the diagnosis of visceral pathology, and even if it cannot furnish

a certain diagnosis, at least it helps in establishing one. All the mistakes made in radiography must be due to errors of interpretation. M. Aubourg showed on the screen M. Delherm's pictures of the lungs, demonstrating the radiographic signs by which the practitioner can diagnose tuberculosis, pulmonary congestions, abscess of the lung, cysts, with displacement of the vital organs, and diaphragmatic pleurisies. He subsequently demonstrated the stomach and intestine in like manner. M. Lebon showed pictures of the heart and the aorta, and M. Beaujard of the kidney and the bladder.

Death of Professor Albarran.

French science has been plunged into mourning by the death of Professor Albarran, who died after an illness lasting almost three years. Although born in Cuba, M. Albarran had lived nearly all his life in France. From the outset of his career he distinguished himself by his diligence, his intelligence, his accuracy, and the originality of his researches. In his promotion to the internship he came out first in the list, and received the gold medal. As a pupil of Professor Guyon he naturally followed in the same course, and succeeded him in his chair. He has done much work on the bacteriology of the urinary passages, on tumours of the bladder, prostatectomy, and catheterism of the ureter. He attained the goal of his ambition early, and has left behind him an honourable name.

Jan. 29th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Ontario Vital Statistics, 1910.

THE Registrar-General's Department, Ontario, in the Blue-book shortly to be issued, will report for the year 1910 that there were 55,871 births, 24,036 marriages, and 33,539 deaths in the province during that year, or 24·9, 10·7, and 14 per 1000 of the estimated population. In the cities, for births, marriages, and deaths there is a ratio of 32·2, 20·2, and 21·1 per 1000, while in towns under 5000 population and the country districts the ratio is 21·6, 10·4, and 14·7 respectively. Of the total number of deaths—33,539—there were 706 from typhoid fever; 2287 from tuberculosis in all forms, which was 103 less than in 1909; cancer, 1077; diabetes, 222; anæmia, 327; meningitis, 355; apoplexy, 923; organic heart disease, 2240; broncho-pneumonia, 464; pneumonia, 1458. Diarrhœa was fatal to 1374 infants under 2 years of age, while 2455 died when under 4 months of age. In 284 cases women lost their lives in childbirth. Ninety-one persons took their lives by various methods, 26·3 per cent. by hanging; 266 were drowned; 209 killed by motor-cars; and 17 homicides. Old age was the cause of death in 3429 persons. There were 2207 stillbirths. In infants 6649 died under one year of age, 917 one year old, 424 two years old, 321 three years old, and 247 four years old. The male children born numbered 28,664 and female 27,207. There were 370 pairs of twins, 364 boys and 376 girls; and triplets in five cases, 9 boys and 6 girls. Of the men who married about one-third did so between the ages of 20 and 24, and nearly one-half the women between those ages. Out of a total of 7351 Roman Catholics married, 1509 married out of their denomination, and this in spite of the *ne temere* decree, over which there has been so much discussion in Canada the last two years. Of the grooms, 665 married non-Catholic brides, while 844 professed Catholic girls married non-Catholic grooms. The larger number of these mixed marriages was between Catholics and Anglicans.

The Division of Professional Fees in Toronto.

Early in the year 1908 some interesting letters appeared in THE LANCET on the question of the division of the operation fee between the operator and the general practitioner, and a leading article also dealt with the matter.[1] Recently a motion at a meeting of the Academy of Medicine, Toronto, set out that the *secret* division of a fee or fees with any person or persons who may be instrumental in influencing a patient or patients to apply for operative care or professional advice is unworthy of any member of the medical profession. The motion further asserted that it would be the duty of the council of the Academy to investigate charges under this heading against members, and on proof of guilt either to permit the resignation of the offender or to expel him from the Academy. The questionable practice known as dichotomy has infected the medical life of the United States. The Canadian profession, however, take their professional ethics more from Great Britain. After an extended discussion the Academy has referred the matter to a special committee, which is invited to submit an exhaustive report on a basis of future action.

Reorganisation of Montreal Board of Health.

A deputation of Montreal physicians recently waited on the Board of Control of that city asking that the civic Health Department be reorganised. From the following list of requirements it will be seen that little short of a revolution was asked for. The deputation suggested that the Health Department should control all street cleaning and sewerage; that all employees connected with the city's health should be under the control of the health officer; that there be a medical library for the use of health inspectors, and that lectures be delivered to them; that all employees of the department of health be made to pass examinations and should receive certificates; that nurses be employed to instruct young mothers in the care of infants; that the medical inspectors be given good salaries and not permitted to engage in private practice; that all cases of contagious diseases in the city be promptly reported to the Health Department by practitioners and others; that the Health Department send to the local medical profession monthly reports of the health of the city; that chemical and other departments be created and attached to the Health Department; that fines and penalties on all who disobey the health laws be made more severe; that refrigerator cars be used by railways for the conveyance of milk; that new incinerators be constructed; that steps be taken to establish tuberculosis hospitals in different parts of the city; and that vaccination be made absolutely compulsory.

Public Health Organisation in Ontario.

Dr. J. W. S. McCullough, chief medical officer for the Ontario Government, who is now in the United States investigating the most recent advances in public health matters in that country, will, on his return to Toronto, and prior to the approaching session of the Ontario Legislature, recommend the abolition of the boards of health in the counties of the province, and the substitution therefor of health districts in charge of whole-time health officers. The province will be divided into seven or eight districts, each in charge of an experienced medical man, and instead of being appointed by local authorities these will be appointed by the Government and will be directly responsible to the chief medical health officer. There are at the present time about 800 boards of health in Ontario and as many local officers. The work in most cases is very perfunctorily performed as the remuneration is decidedly small, as a rule the amount paid being less than $50. It is not intended to interfere with the boards of health in the large cities, where competent health officers are engaged with suitable salaries.

Jan. 12th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The New Surgeon-General of the United States Public Health and Marine Hospital Service.

President Taft has appointed Dr. Rupert Blue, of South Carolina, surgeon-general of the United States Public Health and Marine Hospital Service, in succession to the late Dr. Walter Wyman. Dr. Blue graduated in medicine at the University of Maryland in 1892, and entered the Public Health and Marine Hospital Service in 1893. As already mentioned in this column, he did excellent work during the plague epidemic in San Francisco. When announcing the appointment President Taft gave notice that hereafter the term of service of the surgeon-general shall be limited to four years.

The Mott Library Transferred to New York Academy of Medicine.

Dr. Valentine Mott, a well-known New York surgeon who died in 1895, left instructions with his widow that his

[1] THE LANCET, vol. i., 1908, pp. 596, 676, 813, 889, 1032, 1108, 1363.

valuable medical library and instruments should be housed and established at the Mott Memorial Library. In 1896 Mrs. Mott bought a house in Madison-avenue for the purpose. The library was dependent upon public contributions. The trustees, discovering that it was being conducted at a loss, in accordance with a provision in Mrs. Mott's will have decided that the house shall be sold and the proceeds divided among her heirs. The contents of the library and the instruments have been turned over to the New York Academy of Medicine.

The New York Post-Graduate Hospital.

A dinner to commemorate the opening of the new buildings and laboratories of the Post-Graduate Medical School and Hospital, New York, was held at Delmonico's on Jan. 10th. More than 200 members of the staff and their guests were present. Among the speakers were Dr. Samuel W. Lambert, Dean of the College of Physicians and Surgeons of Columbia University; Brigadier-General G. H. Torney, surgeon-general of the army; Dr. Abraham Jacobi, president of the American Medical Association; and Augustus E. Thomas, the playwright.

Fire at the Massachusetts State Leper Colony.

The administration building at the Massachusetts State Leper Colony on Penikese Island was burned down on Jan. 13th, causing a loss of £2000.

The New Buildings of Harvard Medical School.

The establishment of Harvard Medical School will consist of 16 institutions when the six buildings now under construction are completed—viz., the Harvard Memorial Cancer Hospital; the Infants' Hospital, known as the Thomas Morgan Rotch, jun., building; the Children's Hospital; the Peter Bent Brigham Hospital, which has a combined fund for building and endowment of £1,200,000; the State Psychopathic Hospital; and the Robert Brigham Hospital. A project is also afoot to erect a Harvard dormitory and medical union club-house, to be conducted on principles similar to those of the Harvard Union and Dormitories, but confined exclusively to medical and dental students.

A Medical School for the University of California.

At a recent meeting of the Board of Regents of the State of California plans were adopted for the amalgamation of the various departments of medical instruction under the supervision of the University of California. It was decided to secure the services of paid instructors for clinical instruction in place of the voluntary services of practising medical men. The principal chairs of medicine, surgery, and obstetrics will be held by professional instructors, who will devote their whole time to teaching or research work.

Jan. 20th.

Obituary.

SIR HENRY TRENTHAM BUTLIN, BART., F.R.C.S. ENG.,

LATE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND AND OF THE BRITISH MEDICAL ASSOCIATION; CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

ON Wednesday, Jan. 24th, Sir Henry Trentham Butlin died at his residence, 82, Harley-street, after an illness of some two months' duration.

Henry Trentham Butlin was the son of a Cornish clergyman, the Rev. W. W. Butlin, and was born in 1845 at Camborne in that county. He was privately educated until he went to St. Bartholomew's Hospital, where he entered as a student in 1864. Here he commenced his medical studies under favourable auspices, for St. Bartholomew's Hospital at that time had a strong honorary staff, while among the lecturers and teachers Sir James Paget was outstanding. To him Butlin particularly attached himself, and he always acknowledged his great indebtedness to him for the professional success that fell to his share. Butlin succeeded, if anyone ever did, entirely on his own merits; he owed nothing to outside influence, to court or social connexions, or indeed to anything but his own capacity and his high character. He was remarkable as a student by his industry and intelligence, and his career is an exemplification of what these qualities can accomplish when they pursue without faltering a clear and well-defined objective.

He qualified as M.R.C.S. Eng. in 1867 and as L.R.C.P. Lond. in 1868, and in the same year became house surgeon of his hospital. On the completion of this service he entered on country practice, but almost immediately found that his ambitions were centred upon a hospital career. He returned to London in 1870, and began at once to lay the foundations of the distinguished future that was to be his. In 1871 he took the Fellowship of the Royal College of Surgeons, and in the same year was appointed surgical registrar at the Great Ormond-street Hospital for Children, and assistant surgeon to the West London Hospital. He was also connected at one time with an orthopædic hospital as well as with the Metropolitan Free Hospital.

In 1872, the post of surgical registrar at St. Bartholomew's Hospital becoming open, he gladly seized the opportunity thus afforded him of fulfilling his devoted hope of a permanent association with his hospital. In 1873 he gained the coveted Jacksonian prize at the College of Surgeons for his essay on Ununited Fractures. In 1879 he was appointed Demonstrator of Surgery at St. Bartholomew's Hospital Medical School in succession to Professor Howard Marsh, now Master of Downing College, Cambridge, and in this post he soon made an indelible mark. Butlin showed himself at once to be an admirable clinical teacher, keen of observation and accurate in deduction. In 1881 he became assistant surgeon to the hospital and lecturer on surgery. He served as assistant surgeon until 1892, when he became full surgeon, which post he relinquished only in 1902, after 21 years' service on the staff, and was then appointed to the consulting staff. The columns of THE LANCET and *British Medical Journal* testify to the value of the work he did in the hospital during this lengthy period, and it is interesting to record that Butlin, whose clinical lectures were such fine and thoughtful deliveries, disapproved of formal lectures as a part of the compulsory medical curriculum and had designed himself to make proposals for abolishing them. In 1880 Butlin was appointed Erasmus Wilson Professor of Pathology at the Royal College of Surgeons of England, being the first to occupy that post after Sir Erasmus Wilson himself, and he gave the first indications of a direction which he was to follow throughout his career in the selection of a subject for his lectures—viz., the Relations of Sarcoma to Carcinoma. These lectures admirably reflected the practical lessons to be drawn from a clinical study of malignant disease, more especially with reference to the principles governing operative interference. They were republished in book form in 1882 with valuable additions to the tables of cases and additional matter on diagnosis and treatment. Their most striking feature was the care taken to have the data as satisfactory as possible, all the cases utilised being submitted to microscopical examination and the structure of the new growths in every instance being ascertained with precision. In 1887 he published "The Operative Surgery of Malignant Diseases," a book written not to establish any new position or to defend any novel procedure, but rather to formulate the results obtained up to date, showing the bad as well as the good side of operative interference, and containing a collection of statistics that should serve both to restrain and yet to encourage the operator. He laid great stress on the importance of removing widely all malignant tumours—a principle now generally admitted and acted on. Other papers bearing on this subject were articles on tumours in the *International Cyclopædia of Surgery*, on Malignant Diseases (Sarcoma and Carcinoma) of the Larynx, and on Tumours in the third edition of Holmes's "System of Surgery." In 1892 Butlin was appointed Hunterian professor of surgery and pathology at the Royal College of Surgeons, and in 1895 he became a member of council in the presidency of the late Mr. Christopher Heath, his official connexion with the College continuing unbroken from that time on. In 1909 he succeeded Sir Henry Morris in the presidential chair, an office that he relinquished only on Nov. 9th last on account of failing health. In 1893 the University of Durham conferred on him the honorary degree of D.C.L., an example followed by the University of Birmingham in 1910 with the honorary degree of LL.D.

In his Bradshaw Lecture in 1905 Butlin insisted, in the face of the almost unanimous opinion of pathologists, "that carcinoma is a parasitic disease, not in the limited sense in which the term appears to have been used of late as synonymous with infective, but in the larger and wider sense in which it used to be, and should always be, employed, to express the fact of one organism living at the

expense of another organism, each pursuing its otherwise separate and independent existence." Of his Hunterian Oration, delivered at the College of Surgeons on Feb. 14th, 1907, it would be hardly possible to speak in terms too high. It is questionable whether on any previous occasion so adequate a tribute to the memory of John Hunter has ever been paid from that chair. Butlin insisted on the fact that the true value and greatness of Hunter's work lay in his anticipating what still needs to be impressed on many, that the key to the prevention or treatment of disease must be sought and can be found only in the investigation of natural function. He powerfully assisted his audience to grasp the fact that this position entitled Hunter to take rank, not only with the most eminent members of his own calling, but with the small band of philosophers whose researches in various departments of learning have gained for the human race its power to guide and utilise the forces of nature. To add to the charm of this oration it was delivered perfectly clearly and without hesitation as a speech, the speaker being unaided even by notes. The delivery was a triumph of accurate thinking and good memory, and reminded those who heard the oration of some of the oratorical triumphs of Butlin's dead master, Sir James Paget.

During 1910–11 Sir Henry was President of the British Medical Association, and in this capacity he was entertained on June 17th, 1911, at what is believed to be the most largely and representatively attended dinner ever given by the profession to one particular medical man. Over 200 members of the profession were present, drawn, no doubt, by varying ties, which, however, in themselves bespoke the broad gauge character of the man and his activities. As the chairman, Dr. Lauriston Shaw, then pointed out, his affiliations, not only with the British Medical Association, but with the Royal College of Surgeons of England, with the University of London, St. Bartholomew's Hospital, the Pathological and the Laryngological Societies (both now merged in the Royal Society of Medicine, and of both of which he had occupied the presidential chairs), with the Society of Surgeons of Paris and that of Laryngologists of Berlin, all combined to bring together so large and so representative a body of men to do him honour, the relationship of a trusted consulting surgeon to a large number of general practitioners helping to swell the number of those present. His connexion with the British Medical Association was a very close one; he was a member of the Council of that body for many years, of its Journal and Finance Committee, its treasurer, and, finally, in 1910–11, in which year the Association held its annual meeting in London, its President. In all these varying capacities and activities Sir Henry was successful in the most practical way—that is, he left every institution that he served distinctly and appreciably the better for his service. He was unflagging in his zeal, tactful and adaptable, yet without sacrificing his own convictions, even in those matters on which opinions ran contrary, while his gifts as a speaker materially aided every cause he supported. In all things he was guided by ardour for the highest welfare of the profession. There can be little doubt that the arduous exactions of the manifold responsibilities he took upon himself helped to undermine a physique never too strong.

Among Butlin's literary works, other than those already referred to, may be mentioned a paper on the Nature of Fur on the Tongue, published in the Proceedings of the Royal Society for 1879; a Report on Certain Tumours removed in St. Bartholomew's Hospital, with Remarks on the Growth of Fatty Tumours (St. Bartholomew's Hospital Reports, 1873–74); on Minute Anatomy of Two Breasts, the Areolæ of which had had Long-standing Eczema (Medico-Chirurgical Society's Transactions, 1876); and Reports on Cancer for the Collective Investigations (*British Medical Journal*, 1887). His book on "Diseases of the Tongue," published in 1885, was a model of concise writing, logical reasoning, and lucid exposition, particularly in the part relating to cancer, the subject to which he devoted so much of his attention throughout his professional career.

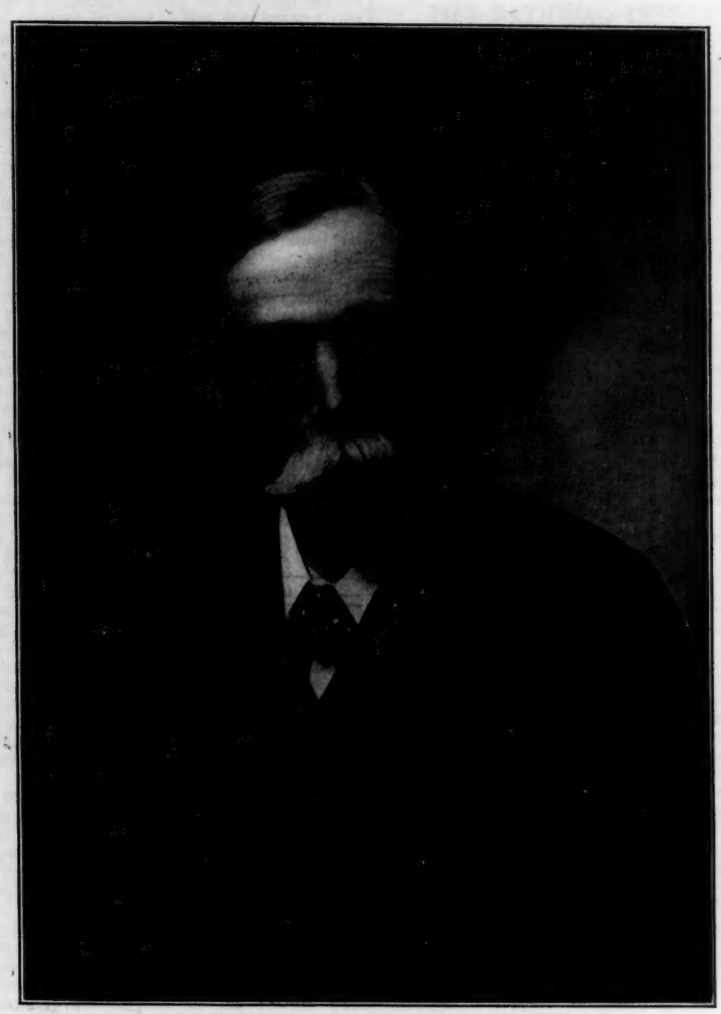
Finally must be mentioned the two lectures on Unicellula Cancri, the Parasite of Cancer, delivered by him before the Royal College of Surgeons last November, in which he expands the idea referred to in his Bradshaw lecture of 1905—viz, that the cancer cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives in the body of the animal affected with the cancer, deriving its nourishment from its host and yet doing nothing to repay the host for the sustenance supplied to it. He concludes that the cancer cell is a veritable parasite formed from the very tissues of its host, remaining in appearance like the cells in which it first appears; he regards it as an independent parasitic animal which he names the unicellula cancri, and is inclined to place among the protozoa. Even if we are not able to agree with this view, the high gifts of its author and his lifetime of experience devoted to the study of the subject must surely make us suspend judgment until more conclusive findings shall either endorse or disprove it.

Sir Henry Butlin, who was made a baronet last year among the Coronation honours, married Miss Annie Balderson, daughter of Mr. Henry Balderson, of Hemel Hempstead, who survives him, and to whose devoted counsel and assistance he paid a touching tribute in his remarks at the dinner above referred to. He leaves also a son, now Sir Henry Guy Trentham Butlin, who was educated at Eton and is at present at Trinity College, Cambridge, and two daughters, one of whom is married to Mr. Percy Furnivall, F.R.C.S.

The following brief but intimate sketch of Sir Henry Butlin's work and character is from the pen of his pupil, friend, and colleague, Mr. C. B. Lockwood:—

How memories linger! Years have passed, but yet one remembers a slight, almost boyish form leaning over the cases in the dim light of the old museum, and quietly, patiently, conscientiously teaching a small attentive class, usually consisting of pupils who lived in his house, for then it was more the custom than it is now for the younger men to take resident pupils. The spacious, thoughtful brow, which looked so white in contrast with the dark and somewhat long hair; the steadfast, clear eye; the firm mouth; the well-poised head—all denoted the gifted being. Then, later, kindly advice, tendered in kindly way and with the pleasantest voice and tone, were added memories. Afterwards writing his registrar's notes in the same quiet, thorough way, and at surgical consultations giving his opinion simply and clearly in a few well-chosen words. Finally, a colleague and sincere friend. It is hard to think that ere those early days he had been in country practice. Those who are not affluent and who marry early must needs keep the wolf from the door. He seldom talked about those country days. To one such as him the daily round the trivial task of a country doctor's life must have left much to be desired. He used to tell how once an unfortunate farmer caught his arm in a machine, and amputation had to be done. Help was scarce, so one of the farmer's men held the limb. He proved efficient, and afterwards gave expression to the anxiety he had gone through, saying: "I thought it all up with master till I saw them little pinchers." Henceforth hæmostatic forceps were often called "them little pinchers." It is easy to guess that at this time he was conscious of possessing superior gifts, and felt impelled to seek a wider sphere for the display of his talents. No small courage was needed. But lack of courage was never one of his attributes. He had the bravest heart. Convinced that he was right he went dauntlessly on, although his keen, intuitive mind had told him all the dangers and difficulties to be faced. So it is not surprising that he put it to the touch and did not fear his fate; came to town and began a toilsome ascent to fame and honour.

His familiar friends know how hard it was at first for him and his true and wise helpmate. Sensitive in a high degree, all his courage was needed to carry him through the early trials of surgery. He said that at first when he had to perform operations at the West London Hospital the feeling of anxiety was almost overwhelming. And yet he became a calm and intrepid operator, one who patiently, quietly, and steadily set to work to do his utmost to extirpate the most widespread malignant growths. In spite of weariness and physical exhaustion he went steadily on. Never of robust physique, and not blessed with that abundance of health and energy which some enjoy, few knew what those efforts were, but to those who knew they were heroic, and gave rise to feelings of the deepest admiration and respect. Those long and exhausting afternoons of toil in hot operating theatres, and in such a fatiguing atmosphere, were bound to tell upon his frail physique. But of his troubles he used to joke and make light: "One day, my dear boy, you think there is a



SIR HENRY TRENTHAM BUTLIN, BART., D.C.L., LL.D., F.R.C.S.,
LATE PRESIDENT OF ROYAL COLLEGE OF SURGEONS OF ENGLAND; CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

malignant tumour in your inside. Next day you wake up and find it gone, and say to yourself it was that horrid gout again." So conscientious in the performance of duty, and so loyal to his hospital and school, he gave up the burdensome task none too soon. Without being humorous himself, yet he had the keenest appreciation and enjoyment of the quaint or humorous, and this trait added much to his happiness and to the happiness of others. But he had also other and soberer characteristics. Not a hero-worshipper, yet he had a hero, and he was Paget. Without a doubt Paget was his model orator—one whose style could hardly be excelled, especially that of his clinical lectures. But the oratory, the genius, the fame of Paget, were not the things of which he spoke so earnestly and feelingly. "Sir James Paget was one of the best men I ever knew; he was a truly good man"; and this was no chance utterance, but often repeated, and a clue to his own ideals of conduct.

It can be truly said of Butlin that he, too, was a good man, blameless in life and conduct. He did not hastily admit anyone into the circle of his intimate friends, but was never tired of entertaining those of whom he was fond. Indeed, he lavished kindness and hospitality, and those who met so often at his table usually found that juniors, whose opportunities of social enjoyment were few and far between, had not been forgotten. Indeed, he had very strong opinions on the duties of hospitality, and considered that we in London were wanting in this respect, and spoke warmly of the lavish hospitality of the provinces during the annual meetings of the British Medical Association. Always generous, during his recent presidency of the Association he expended a sum larger than most dreamt of in a banquet arranged purposely for the entertainment of the provincial visitors. It was characteristic of him to give a large contribution to the Faculty of Medicine of London University when he became its Dean, and he always evinced the keenest pleasure when his friends assisted in the good works in which he was interested. A delightful friend, he revealed his constant thoughts in moments of quiet companionship. It was then that one learned the affection he felt for his aged parents; his gratitude for all the help given by his wife; the pleasure that he took in regaining the broad acres which had long before belonged to his family; the pleasant days spent in looking after them; and the deep interest aroused in him by the education of his son. Begun with a memory, this note ends with a memory; the memory of a brave, indomitable man, a loyal colleague, a steadfast friend. Surely he will not "with sparkless ashes fill an unlamented urn."

Funeral services, which were largely attended by the medical profession, personal friends, and representatives of scientific societies and charitable institutions, were held at St. Bartholomew's the Less and St. Andrew's, Wells-street.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Franz von Winckel, formerly professor of midwifery and gynæcology in the University of Munich, at the age of 74. He was the son of Dr. Ludwig Winckel, who in his day was well known in connexion with the practice of Cæsarean section. After graduating in medicine in Berlin he was assistant to Professor Martin, senior, in the Charité midwifery wards, and when only 27 years old was appointed to the chair of obstetrics and forensic medicine in the University of Rostock. In 1872 he went to Dresden, where he was director of the famous midwives' school, and in 1883 was appointed to the chair of midwifery and gynæcology in Munich, from which he retired only four years ago. His works include "Manuals of Midwifery and Gynæcology" and articles in Billroth's "Handbuch der Frauenkrankheiten." He also published several works dealing with the duties of midwives. He was one of the founders of the German Gynæcological and Obstetrical Society, and edited the society's valuable clinical reports.—Dr. Edmund Biernacki, professor of pathology in the University of Lemberg.—Dr. P. Giura, *privat-docent* of stomatology in the Genoa Medical School.—Dr. A. Serafini, professor of experimental hygiene in the University of Padua.—Dr. O. F. Wadsworth, formerly professor of ophthalmology in Harvard University.—Dr. J. T. Davidson, professor of ophthalmology and otology in the Medical College of Virginia, Richmond.—Dr. S. B. Bond, formerly adjunct professor of genito-urinary diseases in the University of Maryland, Baltimore.—Dr. Rhett Goode, professor of anatomy and surgery in the Medical College of Alabama, Mobile.—Dr. P. D. Hughes, professor of clinical surgery in the College of Physicians and Surgeons, Kansas City.—Dr. Carl Horstmann, extraordinary professor of ophthalmology in Berlin, aged 64. He was formerly assistant to Professor Schweigger, and studied in many foreign hospitals in Holland, England, and France. He published numerous papers connected with ophthalmology.

THE NATIONAL INSURANCE ACT.

THE PROPOSED CONFERENCE WITH THE INSURANCE COMMISSIONERS.

ON Jan. 24th the National Insurance Commissioners for England announced, through the Assistant Secretary to the Joint Committee, their intention to take the earliest opportunity of personally conferring with representatives of the chief sections of the community specially concerned, in order to bring the Insurance Act into operation. With a view to obtaining in this manner suggestions from representatives of the medical profession on certain important questions of preliminary procedure, the Joint Committee of the Commissioners for England, Scotland, and Wales have made arrangements for a conference to-day (Friday, Feb. 2nd). The point specially indicated for discussion was the selection of medical members of the Advisory Committee to be consulted by the Commissioners in the framing of regulations. The letter of invitation also suggested that the Commissioners would welcome the views of the medical representatives at the conference upon other matters of procedure in bringing the Act into operation. We understand that invitations to the conference have been addressed to the following medical bodies: the General Medical Council, the Royal College of Physicians of London, the Royal College of Surgeons of England, the British Medical Association, the Scottish Central Council, the National Medical Union, the Reform Committee of the British Medical Association, and the Imperial Medical Reform Union. The Royal College of Physicians of London has decided not to accept the invitation, an example that has been followed by the Royal College of Surgeons of Edinburgh and the Council and the Reform Committee of the British Medical Association.

A WELSH MEDICAL COUNCIL.

We understand that it is intended to form a Welsh Medical Council, primarily through the machinery of the British Medical Association, so that the requirements of the profession in Wales may be formulated for the comprehension of the Welsh Insurance Commissioners. The leaders in the movement feel strongly that a united action with the Commissioners will be more effective than local representations to Local Insurance Committees. A meeting of Welsh medical men will be held at the Raven Hotel, Shrewsbury, at 2 P.M. on Friday, Feb. 9th, when resolutions will be proposed affirming the feeling of the meeting and ensuring that the medical profession in Wales will not work under the Act unless their rights are duly recognised. The Council will nominate an executive to carry on correspondence with the Welsh Commissioners, and to a great extent may be considered a parallel body to the Scottish Central Council, described in our columns last week.

RECOMMENDATIONS OF THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION.

At the quarterly meeting of the Council of the British Medical Association held on Wednesday, Jan. 31st, the Council's report to the Association on the National Insurance Act was considered and passed for circulation among the members. The report includes a record of the action taken by the Council to give effect to the instructions of the Representative Body; a summary of the position that now confronts the medical profession under the Act; and the conclusions and recommendations of the Council. The latter are as follows:—

I. That the Council be instructed to press on the Government and the Commissioners the further conditions necessary for securing the requirements of the profession.

II. That the Council be instructed to notify the Insurance Commissioners that no negotiations will be entered into with

any Insurance Committee until the Representative Body is satisfied that the requirements of the profession are conceded.

III. That the Council be instructed, as soon as possible after the issue of the regulations by the Insurance Commissioners, to submit a report thereon to the Divisions and the Representative Body.

IV. That the Council be instructed to make all necessary arrangements for the appointment of provisional Medical Committees in every insurance area to safeguard the interests of the profession, without prejudice to the question of whether these Committees shall later accept "recognition" as statutory Local Medical Committees.

V. That the Council be instructed to take steps to organise the profession so as to secure that, failing the provision of adequate remuneration of medical practitioners under the National Insurance Act, no contract practice appointment for attendance upon insured persons shall be held at a lower rate than that which may be agreed upon by the Representative Body as adequate.

VI. That a State Sickness Insurance Committee be appointed to consider and report to the Council on all matters connected with the National Insurance Act; that the committee consist of (*a*) 12 members elected by the Representative Body, (*b*) 12 members elected by the Council, (*c*) two members nominated by the Association of Registered Medical Women; (*d*) the *ex-officio* members; and that the committee be empowered to add to its numbers for special purposes not more than four additional members.

These recommendations are submitted by the Council for the consideration of the divisions of the Association prior to the next meeting of the Representative Body. The Council's report of the future action to be taken by the Association will be considered at a Special Representative Meeting which is announced to be held at the Guildhall, London, on Tuesday, Feb. 20th, at 10 A.M., and on Wednesday, Feb. 21st, in the Court of Common Council Chamber.

BRITISH MEDICAL ASSOCIATION REFORM COMMITTEE.

The provisional executive of the Reform Committee of the British Medical Association, whose manifesto we printed in our issue of Jan. 20th, has issued through its honorary secretary, Mr. P. C. Raiment, a letter to medical practitioners, dated Jan. 29th, which says:—

> You will probably agree that it is only by a properly organised effort, acting on a common basis, that there is any hope of securing the alterations in the National Insurance Act which are necessary if the profession is to obtain its minimum requirements with any security, and with this object I venture to ask if you will become a member of the Reform Committee. The committee believe that no effectual and permanent security can be obtained under Regulations, which can be rescinded as easily as they are made by the Insurance Commissioners; and, therefore, it is felt that only by an Act of Parliament embodying the six cardinal points can any satisfactory solution be reached.
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> In order that the necessity for this may be impressed upon the Council of the British Medical Association, it is proposed that definite resolutions should be moved in each division of the Association instructing the Representatives to support the following motion at the Representative meeting on Feb. 22nd, viz.: This Representative Meeting directs the Council to inform, in plain and unmistakable language, the Commissioners appointed under the Insurance Act, 1911, that unless the six cardinal points as originally formulated by the British Medical Association be embodied in a Bill amending the Insurance Act, 1911, which shall become law in the next session of Parliament; and unless, in the meantime, these six points be incorporated in the Regulations to be issued by the Commissioners in such a manner as shall be effectual and permanent until such amending Act is passed, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the undertaking which has already been signed by over 25,000 medical practitioners.

A copy of the manifesto is enclosed with Mr. Raiment's letter, and medical men who are in agreement with the objects outlined in the two communications are asked to subscribe 5*s.* and to fill in a form of application for membership of the British Medical Association Reform Committee. The form of application is worded to include not only those practitioners who are members of the British Medical Association, but also those who intend to become members of the Association. The question thus arises as to whether the Reform Committee can quite substantiate its claim to the full title which it has assumed. The address of the Reform Committee of the British Medical Association is 29, Old Queen-street, Westminster, S.W., not 129, as was stated in our last issue.

THE BIRMINGHAM COMMITTEE.

We learn that the practitioners of Birmingham have formed an emergency committee outside the local divisions of the British Medical Association with the following objects:—

1. To adopt and to advocate the policy of discontinuing negotiations with the Government and Commissioners, and of refusing to take any part in administrative or medical work under the Act, as under it the demands of the profession were not, and could not be, conceded.
2. To take all possible steps to ensure that this policy be adopted by the British Medical Association both locally and centrally.
3. To formulate what they consider should be the *minimum* requirements of the profession, should the Government desire to amend the present Act.

The committee disclaims hostility to the Association, and numbers among its members the representative of the Birmingham Branch on the Council of the Association and the representative of the Birmingham Central Division on the Representative Body. The committee has decided not to amalgamate at present with the British Medical Association Reform Committee, with which it has been in correspondence.

The honorary secretary of the Wandsworth Division of the British Medical Association asks us to state that the meeting of Wandsworth medical men on Jan. 22nd, referred to in our last issue, was not technically a meeting of the Wandsworth Division.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Paul Preiswerk has been recognised as *privat-docent* of Odontology.—*Berlin:* Professor Theobald Smith, of Harvard University, is giving a special course of lectures, open to students of all faculties, on Parasitism and Disease.—*Cracow:* Dr. Johann Piltz has been promoted to the chair of Psychiatry and Neurology.—*Christiania:* Madame Marie Kjölseth has received the gold medal of the University for her researches in Pathological Anatomy.—*Bonn:* Dr. O. von Franqué, professor in Giessen, has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. Fritsch retired.—*Dresden:* Dr. Rietschel, Director of the Sucklings' Home, and Dr. Galewsky, an eminent dermatologist, have been granted the title of Professor.—*Erlangen:* Dr. Hermann Euler, *privat-docent* of Odontology, has been granted the title of Extraordinary Professor.—*Freiburg:* Dr. August Weismann is retiring at the close of the winter session from the chair of Zoology.—*Hanover:* Dr. Becker, Oberarzt of the Surgical Clinic in Rostock, has been appointed Director of the Children's Hospital.—*Lemberg:* Dr. Heinrich von Halban has been promoted to the chair of Psychiatry and Neurology.—*Lyons:* Dr. T. Lépine, *agrégé*, has been appointed Clinical Professor of Mental Diseases in succession to Dr. Pierret.—*Munich:* Dr. Rullmann, of Darmstadt, has been granted the title of Professor.—*Münster:* Dr. Rammstedt, a Military Surgical Specialist, has been granted the title of Professor.—*Strasburg:* Dr. Bartels, *privat-docent* of Ophthalmology, and Dr. Schickele, *privat-docent* of Gynæcology, have been granted the title of Professor.—*Würzburg:* The large Rinecker gold medal has been awarded to Dr. Rubner, Director of the Berlin Physiological Institute.

ROYAL FREE HOSPITAL.—The Earl of Sandwich presided at the recent meeting of the committee of management of the Royal Free Hospital, at which the following resolutions were passed:—

> That the committee of management desire to offer their cordial congratulations to Miss Eleanor Davies-Colley, M.D., B.S. Lond., upon her admission to the Fellowship of the Royal College of Surgeons of England. Miss Davies-Colley being the first lady to attain this position the committee appreciate the distinction gained by the Medical School of the Royal Free Hospital through her achievement.
>
> The committee also desire to endorse the congratulations which the Board rendered in 1909 to Mrs. Haslam (*née* Miss I. Woodward), M.D. Lond., who, after receiving a medical education at the London School of Medicine for Women and the Royal Free Hospital, was admitted to membership of the Royal College of Physicians of London, being the first lady to receive this diploma.

It was also reported that the Cordwainers' Company will present a gold medal to the nurse who shall obtain the highest number of marks at the annual examination.

BRITISH MEDICAL BENEVOLENT FUND GUILD.—A drawing-room meeting of this guild was held at 100, Harley-street, London, W., on Jan. 25th, to meet the Lady Mayoress and to consider the extension of the guild. Fifteen ladies

have offered to work in making the charity better known, taking the metropolitan boroughs (with sub-divisions) as the basis of the scheme. As a result of the meeting 11 boroughs will be systematically worked, and it is hoped that very shortly the whole 29 will be visited. The ladies will work with Mrs. H. H. Clutton, 3, Park-square, London, N.W., who has consented to be chief secretary and organiser, and a date is to be arranged when the workers and friends of the guild will meet by invitation of the Lady Mayoress at the Mansion House.

THE HUNTERIAN SOCIETY.—The annual oration of the Hunterian Society will be delivered at the London Institution, Finsbury-circus, E.C., by Dr. T. Glover Lyon, on the Cure of Consumptives, a Review and a Forecast, on Wednesday evening, Feb. 14th, at 9 P.M. It would much facilitate the arrangements for the anniversary dinner if those Fellows who intend to be present would signify the same to the honorary secretaries, Dr. A. P. Gibbons, 17, Finsbury-circus, E.C.; and Dr. A. C. Jordan, 11, Bentinck-street, W.

TWELFTH CONGRESS OF THE GERMAN SOCIETY FOR ORTHOPÆDIC SURGERY.—This Congress will take place in Berlin (Langenbeckhaus, Ziegelstrasse, 10 and 11) on April 9th, 1912, the day before the meeting of the German Surgical Society. It will be opened at 9 A.M. The principal subject for discussion will be the Treatment of Infantile Paralysis, by Professor Dr. Paul Krause, of Bonn, and Professor Dr. Fritz Lange, of Munich. Dr. H. Gocht, of Halle a.S., is the President for the year 1912. Preparations, apparatus, and instruments for demonstration are to be addressed to Herr Melzer, Langenbeckhaus, Ziegelstrasse, 10/11, Berlin, N., and applications in respect to membership to Professor Dr. Joachimsthal, Genthinerstrasse, 16, Berlin, W.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual dinner of the West London Medico-Chirurgical Society will be held in the Wharncliffe Rooms, Hotel Great Central, on Thursday, Feb. 8th, at 7.30 for 8 P.M.

A LECTURE on "Malady and Melody: or the Influence of Music in the Healing Art," will be delivered by Dr. G. Norman Meachen, in the Vestry Hall of St. Paul's Church, Canonbury, N., on Tuesday evening next, Feb. 6th, at 8 o'clock. Miss Florence Holdernesse, among others, has kindly consented to supply vocal illustrations.

CENTENARIANS.—Mrs. Annis Moore, of Plymouth, recently celebrated the anniversary of her 101st birthday, as also did Miss Ann Hutchings, an inmate of the Wellington Workhouse Infirmary, Somerset.

UNIVERSITY COLLEGE HOSPITAL.—Sir Ernest Hatch has accepted the office of treasurer of the corporation of University College Hospital and Medical School.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.

Nouveau Traité de Chirurgie Clinique et Opératoire. Publié en Fascicules sous la Direction de A. Le Dentu et Pierre Delbet. XXX. Maladies de la Vessie et du Pénis. Par F. Legueu, Professeur Agrégé à la Faculté de Médecine et Chirurgien des Hôpitaux; et R. Michon, Chirurgien des Hôpitaux de Paris. Price not stated.

BAILLIÈRE, TINDALL, AND COX, London.

Orthopedic Surgery. By Edward H. Bradford, M.D., Surgeon to the Boston Children's Hospital; and Robert W. Lovett, M.D., Associate Surgeon to the Boston Children's Hospital. Price 14s. net.

Diseases of the Stomach. A Text-book for Practitioners and Students. By Max Einhorn, M.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital. Fifth revised edition. Price 14s. net.

A Text-book of Pathology. With a Final Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York; and T. Mitchell Prudden, M.D., LL.D., Emeritus Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Ninth edition. Price 25s. net.

Diseases of Infants and Children. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; and Godfrey Roger Pisek, M.D., Professor of Diseases of Children, University of Vermont. Second edition, revised. Price 18s. net.

Medical Laboratory Methods and Tests. By Herbert French, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician, Guy's Hospital, &c. Third edition. Price 5s. net.

BUTTERWORTH AND CO., 11 and 12, Bell-yard, Temple Bar, London.

The National Insurance Act, 1911. Being a Treatise on the Scheme of National Health Insurance and Insurance against Unemployment created by that Act, with the Incorporated Enactments, Full Explanatory Notes, Tables, and Examples. By Orme Clarke, of the Inner Temple and Western Circuit, Barrister-at-Law. With an Introduction by Sir John Simon, K.C.V.O., M.P., Solicitor-General. Price 12s. 6d.

CHURCHILL, J. AND A., London.

Who's Who in Science (International). 1912. Edited by H. H. Stephenson. Price 6s. net.

COLUMBIA UNIVERSITY PRESS, New York. OXFORD UNIVERSITY PRESS (Mr. HENRY FROWDE), London.

Columbia University Lectures. Scientific Features of Modern Medicine. By Frederic S. Lee, Ph.D., Dalton Professor of Physiology, Columbia University. Price $1.50 net, or 6s. 6d. net.

FABIAN SOCIETY, 3, Clement's Inn, Strand, London, W.C.

Fabian Tract No. 160. A National Medical Service. By F. Lawson Dodd, M.R.C.S., L.R.C.P. Lond., L.D.S., D.P.H. Eng. Published and sold by the Fabian Society. Price 2d.

FISCHER, GUSTAV, Jena.

Handbuch der Pathogenen Mikroorganismen. Herausgegeben von Dr. W. Kolle und Dr. A. von Wassermann. Zweite vermehrte Lieferung (Bd. I., Bogen 16–25). Price M.5. (Band IV., Bogen 1–8). Price M.5. (Das Handbuch erscheint in etwa 40 Lieferungen: Preis jeder Lieferung 5 mark.)

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Siebzehnte Lieferung. Band I. Physiologie der Körpersäfte. Physiologie der Atmung. Erste Hälfte. Bogen 11 bis 20. Price M.5.

Achtzehnte Lieferung. Band II. Physiologie des Stoffwechsels. Physiologie der Zeugung. Erste Hälfte. Bogen 72 bis 98, nebst Titel und Inhalt. Price M.5.

Neunzehnte Lieferung. Band III. Physiologie des Energiewechsels. Physiologie des Formwechsels. Erste Hälfte. Bogen 1 bis 10. Price M.5.

Handbuch der Gesamten Therapie. In sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Zweiundzwangiste Lieferung. Price M.4.50. (Preis des vollständigen Werkes: 100 Mk., geb. 117 Mk. 50 Pf.)

Lehrbuch der Therapie innerer Krankheiten. Für Aerzte und Studierende. In zwei Bänden. Herausgegeben von Dr. Paul Krause und Dr. Carl Garrè. Zweiter Band. Spezielle Therapie innerer Krankheiten. Price, paper, M.10.50; bound, M.11.50.

Die Krankheiten des Mundes. Von weil J. Von Mikulicz und W. Kümmel. Dritte Auflage. Neu bearbeitet von Werner Kümmel, Direktor der Universitätsklinik für Ohren-, Nasen-, und Kehlkopfkranke in Heidelberg. Mit Beiträgen von Prof. A. Czerny, Direktor der Universitätskinderklinik in Strassburg i.E., und Prof. J. Schäffer in Breslau. Price, paper, M.9; bound, M.10.

Das Bakterien-Anaphylatoxin und seine Bedeutung für die Infektion. Von Dr. Hermann Dold, I. Assistent am Institut für Hygiene und Bakteriologie der Universität Strassburg. (Aus dem Institut für Hygiene und Bakteriologie der Universität Strassburg; Direktor: Geheimrat Professor Dr. Uhlenhuth.) Price M.2.80.

Sammlung Anatomischer und Physiologischer Vorträge und Aufsätze. Herausgegeben von Prof. Dr. R. Gaupp und Prof. Dr. W. Trendelenburg. Heft 17 (Zweiter Band, Heft 4). Physiognomie und Schädel. Von Dr. med. H. von Eggeling, a.o. Professor und Prosektor an der Anatomischen Anstalt der Universität Jena. Price M.1.50; subscription price, M.1.20.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, London, E.C.

New Zealand, the Country and the People. By Max Herz, M.D. Price 12s. 6d. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

A Dictionary of Applied Chemistry. By Sir Edward Thorpe, C.B., LL.D., F.R.S., Professor of General Chemistry and Director of the Chemical Laboratories of the Imperial College of Science and Technology, South Kensington, London. Assisted by Eminent Contributors. In five volumes. Vol. I. Revised and enlarged edition. Price 45s. net.

Heredity and Society. By William Cecil Dampier Whetham, M.A., F.R.S., Fellow and Tutor of Trinity College, Cambridge, and Catherine Durning Whetham, his Wife. Price 6s. net.

ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, Conduit-street, Regent-street, London, W.

Modern German Hospital Construction. By William Milburn, Jun., A.R.I.B.A., Henry Saxon Snell Prizeman, 1908, Godwin Bursar, 1910. Price 3s. 6d. net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in the Northwestern University Medical School (the Chicago Medical College), Chicago; and Frederick Peterson, M.D., Ex-President of the New York State Commission in Lunacy, Professor of Psychiatry, Columbia University. Seventh edition, thoroughly revised. Price 21s. net.

Operative Obstetrics, including the Surgery of the Newborn. By Edward P. Davis, A.M., M.D., Professor of Obstetrics, Jefferson Medical College. Price 24s. net.

A Text-book of Medical Chemistry and Toxicology. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Third edition, thoroughly revised. Price 15s. net.

A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Tenth edition, thoroughly revised. Price 24s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BALL, W. GIRLING, F.R.C.S., L.R.C.P. Lond., has been appointed Surgeon to the Alexandra Hospital for Hip Disease.

CATHCART, J., M.B., Ch.B. Edin., has been appointed Assistant Medical Officer to the Barnes Convalescent Home, Cheadle.

COOMBE, RUSSELL, F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Budleigh Salterton (Devon) Cottage Hospital.

CORE, D. E., M.D. Vict., M.R.C.P. Lond., has been reappointed Resident Medical Officer at the Manchester Royal Infirmary.

EDDISON, F. R., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bedale District of the county of Yorks, North Riding.

HUDSON, E. P., L.D.S. Eng., has been appointed Dental Surgeon to the Royal Free Hospital.

HUGHES, E. E., M.B., Ch.B. Vict., has been reappointed Resident Medical Officer at Barnes Convalescent Home, Cheadle.

JAMES, A. H., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Blaenavon District of the county of Monmouth.

JONES, E. H., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Northampton General Hospital.

LEGATE, R. L., L.R.C.P. & S. Edin., L.A.H. Dub., has been re-appointed Medical Officer of Health for the Christchurch Urban District of Bournemouth.

MARSDEN, J. A., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Hipperholme District of the county of Yorks, West Riding.

MATTHEWS, NEWTON, M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

NICHOLL, ERNEST EDWARD, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth and Ninth Districts by the South Molton (Devon) Board of Guardians, and Medical Officer for the High Bray District by the Barnstaple (Devon) Board of Guardians.

ORRIN, HERBERT CHARLES, F.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Surgeon to the Newton Abbot (Devon) Hospital.

PATEY, WALTER, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Newton Abbot (Devon) Hospital.

ROBINS, J. N., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Chatham District of the county of Kent.

RUSSELL, JAMES WILLIAM, M.D., B.C. Cantab., F.R.C.P. Lond., has been appointed Honorary Physician to the Birmingham General Hospital.

SEAL, PHILIP HENRY, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the South Molton (Devon) Union Workhouse.

TURNER, A., L.R.C.P. Edin., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Kelvedon District of the county of Essex.

TYLECOTE, F. B., M.D. Vict., M.R.C.P. Lond., has been reappointed Medical Registrar to the Manchester Royal Infirmary.

WEBB, WILLIAM TUDOR, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third, Fifth, and Tenth Districts by the Kingsbridge (Devon) Board of Guardians, and Medical Officer of Health for the Kingsbridge Rural District Council.

WESTMACOTT, FREDERIC H., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Aural Department of the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BRIDGWATER HOSPITAL.—House Surgeon for six months, unmarried. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with apartments, board, and laundry.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Resident Medical Officer. Salary at rate of £50 per annum, including board, lodging, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £150 per annum, with board, &c.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £75 per annum, with board, laundry, and residence.

EASTBOURNE, COUNTY BOROUGH OF.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £250 per annum.

GLOUCESTER COUNTY ASYLUMS.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, rations, laundry, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Clinical Pathologist and Bacteriologist. Salary 100 guineas per annum.

LARBERT, STIRLING DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £130 per annum, with board, &c.

LEICESTER, PARISH OF.—Resident Second Assistant Medical Officer. Salary £130 per annum, with rations, apartments, and washing.

LONDON COUNTY COUNCIL.—Deputy Medical Officer of Health and Deputy School Medical Officer of the County of London. Salary £1000 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MIDDLESEX HOSPITAL, W.—Assistant Medical Officer to the Electrical Department. Salary £50 per annum.

MILDMAY MISSION HOSPITAL, Bethnal Green, E.—House Surgeon, unmarried. Salary for first six months, as Junior, at rate of £70 per annum, and then, as Senior, £80 per annum, with board, residence, and laundry.

NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Honorary Ophthalmic Surgeon, Honorary Assistant Surgeon, and Honorary Assistant Physician.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with quarters, board, and laundry.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT, Bromley, E.—Third Assistant Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon, for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Honorary Assistant Surgeon. Also Surgical Registrar. Salary £105 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry. Also Surgeon-in-Charge of X Ray Department. Salary £50 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105, with residence, attendance, and midwifery fees.

SALFORD COUNTY BOROUGH.—Assistant to Medical Officer of Health. Salary £250 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon. Salary £40 per annum.

SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology and Pharmacology. Salary £200 per annum.

SHERWOOD FOREST, RANSOM SANATORIUM FOR CONSUMPTIVES, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

STAFFORD, COTON HILL LUNATIC HOSPITAL.—Assistant Medical Officer. Salary £150 per annum, with residence, board, and laundry.

WALSALL AND DISTRICT HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry. Also House Physician. Salary £90 per annum, with board, residence, and laundry.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Swineford, in the county of Mayo; at Luddenden, in the county of Yorks, West Riding; at Romford, in the county of Essex; at South Molton, in the county of Devon; and at Virginia, in the county of Cavan.

Births, Marriages, and Deaths.

BIRTHS.

DUDGEON.—On Jan. 28th, at Ashley-gardens, S.W., the wife of Leonard S. Dudgeon, F.R.C.P. Lond., of a daughter.

MOON.—On Jan. 25th, at Green-street, W., the wife of R. O. Moon, M.D., of a daughter.

NEWLAND.—On Jan. 22nd, at "Layston," Bromley, Kent, the wife of H. G. Newland, L.D.S., of a daughter.

MARRIAGES.

COWEN—WATTS.—On Jan. 27th, at St. Stephen's, Gloucester-road, S.W., Edward George Huxley Cowen, R.A.M.C., to May Eva, eldest daughter of Mr. and Mrs. A. C. Watts, of Sutton, Surrey.

MCCULLY—CLEATON.—On Jan. 24th, at St. Stephen's Church, Hampstead, Donald McCully, M.R.C.S., L.R.C.P., to Gwendolen, only daughter of E. R. Cleaton, "The Pryors," Hampstead.

DEATHS.

DUKE.—On Jan. 30th, at Southwick, Sussex, Allen A. Duke, M.D. Edin., suddenly, of cardiac failure, aged 75.

HOLMES.—On Jan. 28th, at Westgate-terrace, London, S.W., Robert Andrew King Holmes, Lieutenant-Colonel Indian Medical Service.

OSWALD.—On Jan. 24th, at Clapham-road, S.W., J. W. J. Oswald, M.D., F.R.C.S. Edin., in his 81st year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"WILL THE EDITOR KINDLY——?"

A WEEK never passes without some queer communication or illiterate request reaching the offices of THE LANCET. Such letters from non-medical readers naturally deal for the most part with the ailments of the writers or of their friends, and the majority of these seek our advice on the subject of a "Specialist" or a "Cure." A few weeks ago we were requested to name "a specialist in von Recklinghausen's disease," and this week we are asked if we "know of any cures for a serious complaint called sarcoma of the small 'spindle cell type." We are often tempted to print the more unusual of these questions, but in many cases it would be cruel to do so. Often the stranger the request the more pathetic is the ignorance displayed. But there are other communications equally ignorant and illiterate which are written in a different spirit and deserve to be held up to ridicule. Uneducated cranks of every kind write to us to ventilate their views, and their obvious simplicity and sincerity forbid us to pillory them by publication. It is only when they are abusive or mischievous that do so. The following letter comes from one who calls himself a "Hydropathist":—

To the Editor of THE LANCET.

DEAR SIR,—Modern Science teaches there is no infectious disease none whatever. But you have not got it and we can never have it, for we have medical council which governs medical practice all the time. And in medical practice there is no cure for fever or any other infectious disease so the poor patient has to suffer like a dog. Fever must run its course is a fallacy of the most dangerous type. And is unscientific and unreliable as it generates matures and distributes millions of germs to make other cases of infectious diseases. Can you wonder that the germs get mixed and patients contract other diseases however careful the Physicians and Nurses might be.

In Hydropathy there is no infectious disease, we cure fever without poisonous drugs. We cure fever before it has a name, the Medical man must let fever run for at least two days, so as to know what fever it is, and fever can be cured in 48 hours without complications or anxiety. It is not Christian Science where they pray over the Sick and anoint the head with Oil. But Medical practice is worse then that as they can do nothing in Fever cases.

Yours Very Truly,

Toronto, January 1, 1912. JOSEPH BRADLY, Hydropathist.

Undoubtedly Mr. Bradly might give very evil counsel to people unable to detect his essential silliness.

AN APPEAL FOR INSTRUMENTS.

To the Editor of THE LANCET.

SIR,—I have been asked by Archdeacon Pugh, of Yale, B.C., to appeal to those members of the profession who have any surgical instruments for which they have no further use and are willing to give to a charitable object, that they would send any such instruments to him for use in the Indian hospital at Yale.

I am, Sir, yours faithfully,

Harley-street, Jan. 29th, 1912. RICHARD LAKE.

P.S.—Instruments to be sent to Archdeacon Pugh, 4, Dean's Yard, Westminster.

"COMPENSITIS."

Mr. Alex. Mercer, M.R.C.S., L.R.C.P., writes under the above title:—"This term may be applied to a form of neurosis, with characteristics of its own, which has been manufactured by the machinery of the Workman's Compensation Act. Though distinct from malingering, there are border-line cases which are difficult to differentiate; and, indeed, the two conditions may occur together. It may also be divided from hysteria, which, generally speaking, presents an unstable mental condition previous to the accident, the latter merely being an episode in the course of the disease. In certain temperaments it is difficult to tell where the hysteria begins and the malingering ends, so closely are the two conditions often combined. Here, however, I am attempting to keep compensitis in a category of its own. It may be divided into three types. 1. The litigation type. In this exaggeration is the main characteristic. It follows an injury from which, if the Act were non-existent, an average person would be eager to recover. The usual history is that the patient's mind is first directed to the law by friends or relations. Unfortunately, there are certain of the legal profession who, to put it tersely, do the rest. The anticipation of the pending litigation exaggerates the injury in the patient's mind. Such cases speedily get well when the case is settled. 2. The neurotic type. Here the injured person is what is termed variously by the medical practitioner a 'general complainer' or a 'chronic.' An accident produces a state of mind akin to gratification. The individual may be out of ailments at the time, or existing ailments are promptly overweighted by the injury. These persons are never perfectly happy unless they appear miserable. This state of the nervous system is only acquired by considerable experience. They are apt to put little stress on the actual injury, but all their ailments have (in their minds) undoubtedly sprung from it. They often say, 'I never ailed in my life until this accident.' 3. The neurasthenic type. Patients of this type may never have been ill, or had an accident, or suffered pain before. They have heard of such things, but the reality comes as a shock to them. The injury upsets the normal equilibrium of the nervous system, and they work themselves up into a neurasthenic state. A common symptom is the complaint of various pains in different parts of the body, often springing from the seat of injury. The condition can be differentiated from neuritis in that there are no trophic or vaso-motor disturbances, and the pains follow no definite nerve course. There may be wasting of muscles from prolonged disuse. The two latter types represent a very large number of cases that daily come under the notice of medical referees and are a class in themselves. From a legal point of view they are usually placed amongst the 'unfit-for-work's,' and often the comfortable opinion is expressed that 'they will never be fit for work as long as they live.' This view in certain individuals seems to take such root that conviction becomes a certainty. As long as the condition is one of pure compensitis it is difficult, from a medical point of view, to say that the former work can be resumed, but in a good percentage of cases it is associated with malingering, or the latter takes its place. These are the cases that need all one's experience and knowledge."

WETTING THE FINGER.

To the Editor of THE LANCET.

SIR,—I see that you have been ventilating in your columns objections to the horrible practice of wetting the finger, which is also done in opening paper bags, &c., in shops. Far the most offensive instance is to be observed in tea-shops, where the girls behind the counter almost invariably wet the finger to detach the edges at the mouth of a bag and then *with the same finger* pick up a bun or cake to put in the bag! So offensive is it that I have altogether given up buying buns. Public opinion is the main thing, but until it is educated to repudiate altogether such practices the large employers of such labour—i.e., Messrs. Lyons and the A.B.C. directors—could do much by strictly enforcing prohibition. If they would at the same time provide small forks or tongs for touching cakes, and enforce the use of them on their employees, they would be doing great service to the more fastidious of their customers. Some of the girls seem to take a positive delight, not only in fingering, but in handling the cakes well over in the palm, and woe be to the customer who dares to protest! One of the worst instances of the previously mentioned nuisances I have ever known was when I bought some lozenges in a druggist's shop this morning, and the assistant actually licked up the envelope before handing it to me! These shops are usually above reproach in this respect.

I am, Sir, yours faithfully,

Hammersmith, W., Jan. 26th, 1912. G. E. MITTON.

*** In the annotation on Hygiene and the Tube Booking Clerk, referred to above by our correspondent, we suggested that if the unmoistened finger is placed at a mechanical disadvantage the difficulty might be met by a damping-pad beside each pigeon-hole. We now read in a daily paper that this is done on the Central London Railway. But the moistened finger has not been supplanted by the wet pad throughout the Tube booking-offices of London.—ED. L.

J. S.—We believe that most authorities would regard in-breeding to such an extent as inadvisable in the interests of the next generation.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Feb. 2nd–6th (London, Crystal Palace).—International Bird Show of the London and Provincial Ornithological Society.
" 13th–14th (London).—Central Poor-Law Conference.
March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W (temporary address during building of new house).

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.

Laboratory Meeting at the Pathological Department, St. Bartholomew's Hospital, E.C.

Dr. M. H. Gordon: Slides illustrating Histology of Cord in Acute Poliomyelitis.

Dr. J. F. Gaskell: The Development of a Longitudinal Muscular Coat in the Renal Artery.

Dr. A. E. Gow: The Occurrence of Albumin in the Cerebro-spinal Fluid.

Dr. J. E. H. Roberts: Tumours of Tendon Sheaths.

Dr. F. M. Andrewes: A Case of Syphilitic Disease of the Aortic Intima.

Dr. F. M. Andrewes and Dr. A. E. Gow: The Simulation of Spirochætes by Fibrin Filaments under Dark Background Illumination.

FRIDAY.

GENERAL MEETING OF FELLOWS at 4.45 P.M.

Election of Candidates for Fellowship.

CLINICAL SECTION (Hon. Secretaries: James Galloway, C. H. Fagge): at 8.30 P.M.

Cases:

Mr. F. J. Steward: Successful Excision of Epithelioma of Lower End of Pharynx.

Mr. W. H. Battle: Mikulicz' Disease.

Dr. F. Langmead: Anomalous Œdema.

Paper:

Dr. Wilfred Harris and Mr. W. H. Clayton Greene: A Case of Congenital Absence of the Left Half of the Diaphragm Simulating Pneumothorax.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. A. E. Garrod: Glycosuria. (Lettsomian Lecture I.)

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C.

TUESDAY.—8.15 P.M., Hon. R. J. Strutt: After-glow in Vacuum Discharge Tubes.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY.—8 P.M., Dr. L. Hill and Dr. M. Flack: The Influence of Ozone in Ventilation.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases will be shown by Mr. R. Doyne and Mr. C. Wray.

WIMBLEDON AND DISTRICT MEDICAL SOCIETY, Johnston's Rooms, 6, Broadway, Wimbledon.

FRIDAY.—9 P.M., Mr. J. S. Joly: Recent Advances in the Diagnosis and Treatment of Syphilis and Gonorrhœa.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. Willmott Evans: Clinique (Skin). 5.15 P.M. Lecture:—Mr. A. Lawson: Glaucoma (illustrated by lantern slides).

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. A. Whitelock (Oxford): The Injuries to the Extensor Apparatus of the Knee-joint.

WEDNESDAY.—4 P.M., Mr. E. R. Carling: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. J. Morrison: Use of Forceps during the Second Stage of Labour.

THURSDAY.—4 P.M., Mr. R. Howard: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. Smith: Diet in Enteric Fever.

FRIDAY.—4 P.M., Dr. Dan McKenzie: Clinique (Ear, Nose, and Throat). 5.15 P.M., Lecture:—Dr. W. Wingrave: Pathology of Discharges.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M. Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Symptoms and Treatment of Gall Stones.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Clinical (Urinary Surgery).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture III.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture III.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. H. Cole: Manic Depressive Insanity.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. E. Gillespie: Diseases of the Rectum and Anal Canal.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. E. Gillespie: Diseases of the Rectum and Anal Canal.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture: Dr. R. Wells: Blood-pressure and the Method of Estimating it Clinically.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Enlargements of Liver. 5 P.M., Special Demonstration (or Lecture):—Mr. McGavin: Surgical.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. Pendlebury: Hernia in Children.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Thursfield: Pleurisy in Childhood.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Experimental Poliomyelitis.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. Ormerod: Clinical Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. Griffith: Diagnosis and Treatment of Syphilis.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Fungous Diseases of the Skin—I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Mr. K. Pearson: Sir Francis Galton—His Work and Teaching. (Lecture II.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

MONDAY.—5 P.M., General Meeting.

TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture IV.)

FRIDAY.—9 P.M., Mr. J. A. Harker: Very High Temperatures (with Electric Furnace Experiments).

ROYAL SANITARY INSTITUTE, Board Room, Poor Law Offices, Shakespeare-street, Nottingham.

SATURDAY.—11 A.M., Discussion on Local Public Health Administration and the Insurance Act (opened by Alderman T. J. Dabell, M.R.C.S., J.P.).

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., A Demonstration of Medical and Surgical Cases will given by the Honorary Staff. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Brockbank: Modern Methods of Cardiac Diagnosis.

FRIDAY.—4.30 P.M., Mr. J. H. Ray: Tumours and Enlargements of the Thyroid Gland.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.,, Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (10th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
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THE LANCET Office, Jan. 31st, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 25	29·62	W.	0·37	43	43	40	40	41	Overcast
,, 26	29·83	NNE	0·28	49	52	39	38	39	Overcast
,, 27	30·13	N.E.	...	50	39	34	33	36	Cloudy
,, 28	30·27	N.E.	...	53	38	29	—	30	Fine
,, 29	30·31	E.	...	50	38	27	—	28	Foggy
,, 30	30·28	N.	...	47	41	28	33	33	Overcast
,, 31	30·02	W.	...	49	41	33	34	36	Overcast

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